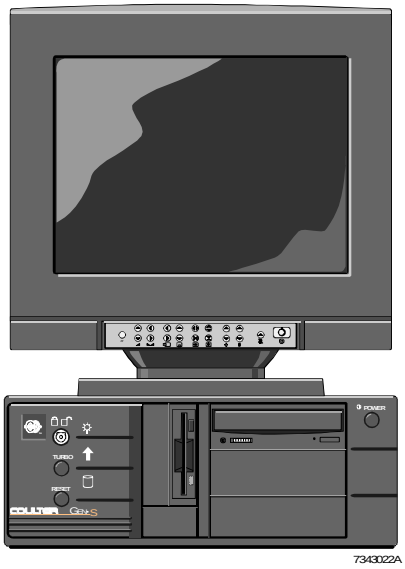
GEN•S Workstation Configuration



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GEN•S Workstation Configuration

1. INTRODUCTION

1.1. Document Layout

This document is divided into sections specific to a model or version of a component in order to minimize documentation update changes. This layout allows for change pages to be inserted without affecting other sections. The layout also provides that all component information can be retained when new information is added. This will enable users of this document to have access to all versions of the GEN•S Workstation in one complete document.

1.2. Scope

The intention of this document is to provide very specific guidelines for configuration of the GEN•S Workstation. The use of incorrect settings may render the system unstable and make troubleshooting intermittent problems extremely difficult. This document includes replacement and configuration procedures that are not intended to be used for routine service on the GEN•S Workstation. This manual does not cover the GEN•S Workstation Application.

It is intended that users of this manual should have achieved, at a minimum, GEN•S Service Certification.

CAUTION: It is possible to complete configuration of some components or software using settings other than the settings detailed in this manual. The use of incorrect settings may make future system upgrades or repairs to the system extremely difficult due to hardware and/or software conflicts. Any deviations from the settings specified in this document will also make troubleshooting and identifying intermittent problems extremely difficult.

WARNING: This document is intended to supply configuration information to assist experienced service personnel for repair of the GEN•S Workstation. This manual is not intended to provide the necessary technical capabilities and know-how in order to properly troubleshoot and repair a GEN•S Workstation. Coulter Corporation assumes no liability whatsoever for any personal injury or property damage resulting from maintenance and/or repair performed by persons not employed by Coulter Corporation.

1.3. Function

The GEN•S Workstation is a combination of hardware and the GEN•S Installation software, which provides a customer interface with data gathered on the GEN•S Analytical Station(s). The GEN•S Installation also provides:

- Quality control analysis
- Verification and troubleshooting functions
- An interface to host computer(s)
- A CD-ROM based online customer manual
- A CD-ROM based online service manual
- Network printer capability
- the GEN•S RCS™ Application for troubleshooting from a remote location

1.4. Operating Environment

To ensure that the GEN•S Workstation has the highest reliability, it should be placed in an area with good ventilation, low humidity, out of direct sunlight and away from heat sources. The rear cooling fan opening must allow for an unobstructed flow of air to ensure that the system does not overheat. Refer to Section 25.1, GEN•S Workstation Installation, for specifications.

1.5. Transporting

Always shutdown and power off the GEN•S Workstation before moving it. Any sudden jar or shock may permanently damage the hard drive. Hard drives are more resistant to shock when they are shutdown.

If the GEN•S Workstation will be transported over a distance, the original packing (or enough padding as reasonably possible) should be used to protect the GEN•S Workstation from excessive vibration or shock.

1.6. Safety Precautions and General Service Information

1. Connecting or disconnecting cables with the power ON can result in injury from an electronic shock. This can also cause electrical spikes which can cause immediate damage to the hardware. When completing any procedures that require disconnecting cables to the computer base, make sure the power is OFF.

2. Standard laboratory procedures should be followed during the operation and/or servicing of the GEN•S Workstation. These practices include, but are not limited to, use of barrier protection, such as protective gloves, protective eye wear, and suitable laboratory attire.

3. Never remove any covers without making sure the power is OFF and the power source is disconnected. The computer base and monitor contain high voltages that can cause injury or death.

4. Even a small electrostatic discharge can damage circuit cards, RAM memory or the CPU. A damaged component might not fail immediately, but over time it will become worse and possibly cause an intermittent problem. Be very careful to handle cards only by the edges. Do NOT touch the gold/silver edge-connectors or any of the components on the board. Leave components in their anti-static bag until ready for installation. ALWAYS wear a ground strap when handling computer components.

5. Always SHUTDOWN and POWER OFF the GEN•S Workstation before moving it. Any sudden jar or shock may permanently damage the hard drive resulting in loss of all data. Hard drives are more resistant to shock if they are shut down

6. Never spray or pour cleaners directly on the computer base or monitor. Any fluid that runs inside the monitor or computer base may result in injury from an electronic shock or cause an electrical short ,resulting in electrical damage to the hardware.

7. Never use any cleaners other than water or glass cleaner on touchscreen monitors as they may damage the touchscreen. Do not use vinegar.

1.7. Hazard Conventions

WARNING Might Cause Injury
CAUTION Might Cause Damage to the Instrument
NOTE Critical Information required to complete a procedure.

1.8. Definition of Acronyms and Terms

Table 1-1: Acronyms and Terms Used in this Document

Term	Definition
+	Used to show keys that must be pressed simultaneously. (i.e., Press <CTRL>+<ALT>+<DEL>)
<>	Used to enclose the name of a key on the keyboard.
ac	Alternating Current. This is used to refer to the voltage at the wall outlet which is either 220V or 110V ac.
Analog Telephone	A standard voice telephone. This type of telephone works with analog telephone lines that are also compatible with modems. These are different than the telephones used in large office or hospital telephone systems that use a high voltage digital signal.
Application	A software program that operates in combination with an operating system to perform a specific task.
Boot	To start the computer system and load the operating system.
Bus	A collection of signal lines. The specifications of a bus defines the purpose of each line and the timing relationship of the electrical signals.
CD-ROM	Compact Disk-Read Only Memory. This type of media allows up to 650MB of data access but cannot be used to save data. It is typically used to distribute applications or OS's.
Choose	Pick an item that begins an action (including menu commands, icons and buttons). The option to choose will be capitalized (i.e., choose OK).
Close	During software procedures this refers to ending an open window or application.
CMOS	Complementary Metal Oxide Semiconductor. A logic circuit family that uses very little power.
Computer Base	The computer case including the system card, drives and circuit cards.
Configuration	The hardware and software settings that allow different hardware and software components of a computer system to communicate.
CPU	Central Processing Unit. The integrated chip that performs computing functions of the computer.
EIDE	Enhanced Intelligent Drive Electronics. An interface specification for drives.
Enter	Type the exact characters that are shown in quotes.
GEN•S Analytical Station	The Coulter® GEN•S Diluter, Analyzer and Power Supply.
GEN•S Application	The software that provides a customer interface for data obtained from the GEN•S Analytical Station(s). This software also communicates between the GEN•S Workstation(s), GEN•S Analytical Station(s), GEN•S SM(s) and host computers.
GEN•S SM	The Coulter® GEN•S SM™ Integrated Slidemaker.
GEN•S System	The complete Coulter® GEN•S System™ including GEN•S Workstation, Analytical Station, and GEN•S SM if attached.
GEN•S Workstation	The Coulter® GEN•S computer including software.
Grayed out	If an item appears "grayed out" in a dialog, the function is not available for the application or peripheral currently being installed.

Term	Definition
GUI	Graphical User Interface. The graphical part of a program or operating system that the operator uses while interacting with a program or operating system.
IRQ	Interrupt Request Lines. A bus signal line used to notify the processor that an event has taken place that requires attention.
ISA	Industry Standard Architecture. A 16-bit extension of the original IBM® PC AT® bus architecture.
Load	Loading a program includes all steps to allow a user to access the program screens.
Logon	Logon includes following all prompts to complete the steps to access the operating system and the GEN•S Workstation Installation if it is loaded.
Minimize	Minimizes the active application window.
NT Server	Microsoft® Windows NT™ Server Refers to the server operating system for the GEN•S Workstation Installation
NT Workstation	Microsoft® Windows NT™ Workstation. Refers to the Windows NT Workstation operating system for the GEN•S Workstation Installation.
OS	Operating System The software that provides a link between Applications and the computer hardware.
PCI	Peripheral Component Interconnect. An advanced 32 bit high-performance local bus that supports multiple peripheral devices.
POWER OFF	Shutdown the software on the GEN•S Workstation until a prompt is given that the system is ready to be powered off. The system is then powered off with the power switch and the ac cord unplugged.
POWER ON	Power on includes plugging in the ac cable and using the power on switch to initiate the boot sequence.
Press	Press the given key on the keyboard. (example Press <CTRL>).
RAM	Random-Access-Memory. The type of computer memory that can be used to store information while a program is running. The information in RAM is not saved when the computer is powered down.
RAS	Remote Access Service. This refers to the Microsoft Remote networking service included in Windows NT.
RCS	Remote Communication System. This refers the complete system including hardware and software that allows the GEN•S Workstation to communicate over telephone lines.
Reboot	To shutdown and restart a computer including the software.
Run	Start an executable file using the run command in Program Manager.
Select	Mark an item (i.e., check boxes and list boxes). The option to be selected will be capitalized, (example, select NT FILE SYSTEM).
SHUTDOWN	Shutdown refers to selecting shutdown on the GEN•S Workstation. The shutdown is completed when a prompt is given that the system can be powered off.
System card	The large printed-circuit board commonly referred to as a mother board on which most electronic devices are mounted. All other circuit cards, drives and peripherals receive control signals or information from the system card.
UPS	Uninterruptible Power Supply. Refers to a line conditioner with a battery backup that prevents damage to computer or loss of data from ac power fluctuations .
Windows NT	Microsoft® Windows NT™. Refers to the Workstation or server operating system for the GEN•S Workstation Installation.

COMPONENT DESCRIPTION AND CONFIGURATIONS

Circuit Cards

2. LIGHT PEN CARD(S)

The light pen card processes inputs from the light pen and the video card. This data is then analyzed and used to allow the light pen to simulate inputs from a mouse. The following table summarizes configurations for the light pen card(s).

Table 2-1: Light Pen Card Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operating System	GEN•S Workstation
FTG PXL395 Light Pen (2.1)	N/A	LPN396.SYS, v1.19b, (7/30/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B

To verify the version of a driver:

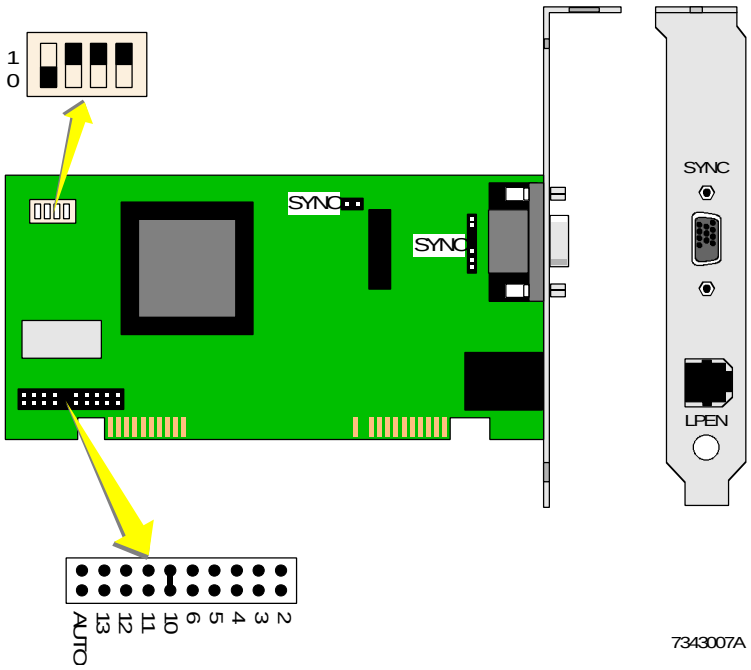
1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

2.1. FTG PXL395-15 Light Pen Card

2.1.1. Input and Output Connections

The FTG PXL395-15 Light Pen Card connects to the ISA bus. There are two connectors on the rear of the card. The bottom connector is for the light pen (LPEN) and the top connector is for the video input cable (SYNC), further detailed below.

Figure 2-1: FTG PXL395-15 Light Pen Card Hardware Configuration



The light pen circuit card includes a cable with three connectors in a Y configuration. The center connector connects to the video card, the male end connector connects to the light pen card and the female end connector connects to the monitor video input cable.

2.1.2. FTG PXL395-15 Light Pen Card Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- FTG PXL395-15 Light Pen Card installed with hardware configured
- Formatted Blank 3.5 HD floppy disk.

For Windows NT 3.51

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.
2. Insert the blank floppy in drive A:.
3. Choose FILE MANAGER from the MAIN group.
4. Choose COPY from the FILE pull down menu.
5. Enter “H:\ADMS\DRV\LIGHTPEN\PXL395*.*” at FROM and “A:\” at TO.

6. Close FILE MANAGER.

7. Choose WINDOWS NT SETUP from the Main Group.

8. At WINDOWS NT SETUP, select CHANGE MOUSE OR KEYBOARD from the OPTIONS pull-down menu.

9. Select OTHER REQUIRES A DISK FROM A HARDWARE MANUFACTURER for the MOUSE field.

10. Enter “A:\ “ for the path then choose OK.

11. Select PXL-395/385 LIGHT PEN DRIVER FOR WINDOWS NT, then choose OK.

12. Choose CLOSE at CHANGE MOUSE OR KEYBOARD.

13. If option appears, select NEW to install a new driver.

14. Enter “A:\”, then choose CONTINUE.

15. Choose OK to accept IRQ 10 and I/O PORT ADDRESS 210.

16. Close WINDOWS NT SETUP.

17. Choose OK at SETUP MESSAGE prompt, then SHUTDOWN AND RESTART.

18. Follow instructions at prompt to calibrate the light pen after Shutdown and Restart.

19. Verify light pen operation.

For Windows NT 4.0

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.

2. Copy “H:\ADMS\DRV\LIGHTPEN\PXL395*.*” to “A:\” .

3. Choose MOUSE from CONTROL PANEL.

4. Select the GENERAL tab.

5. Choose CHANGE then choose HAVE DISK.

6. Choose OK with A:\ as the FILE location.

7. Check SHOW ALL DEVICES then select FTG DATA SYSTEMS for the manufacturer and FTG PXL-395 LIGHT PEN INTERFACE for the MODEL then choose OK.

8. Close MOUSE PROPERTIES.

9. Choose NO to restart computer prompt.

10. Choose LIGHT PEN from CONTROL PANEL.

11. Select the RESOURCES tab and verify the IRQ is 10 and the I/O PORT ADDRESS is 210 then choose OK.

12. Shutdown and Restart the Workstation. Calibrate the light pen by pressing the pen to each of the four lines as they are displayed.

13. Verify light pen operation.

2.1.3. FTG PXL395-15 Light Pen Card Software Calibration

Required Resources:

- FTG Light Pen card installed including software

1. Choose LIGHT PEN from CONTROL PANEL.

2. Choose CALIBRATE and follow instructions.

3. Verify light pen operation.

3. MODEM CARD(S)

Modem Cards translate between the digital signals that a computer uses and analog signals suitable for transmission over telephone lines. Modems are controlled by communication software including RCS and fax applications. The following table summarizes configurations for the modem card(s).

Table 3-1: Modem Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operating System	GEN•S Workstation
US Robotics VI Voice 33.6 KB (3.1)	N/A	N/A	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1

To verify the version of a driver:

1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

3.1. US Robotics VI Voice 33.6Kb Card

The US Robotics VI Voice 33.6Kb card supports up to a 33600 BPS transmission rate with the actual throughput depending on the telephone connection.

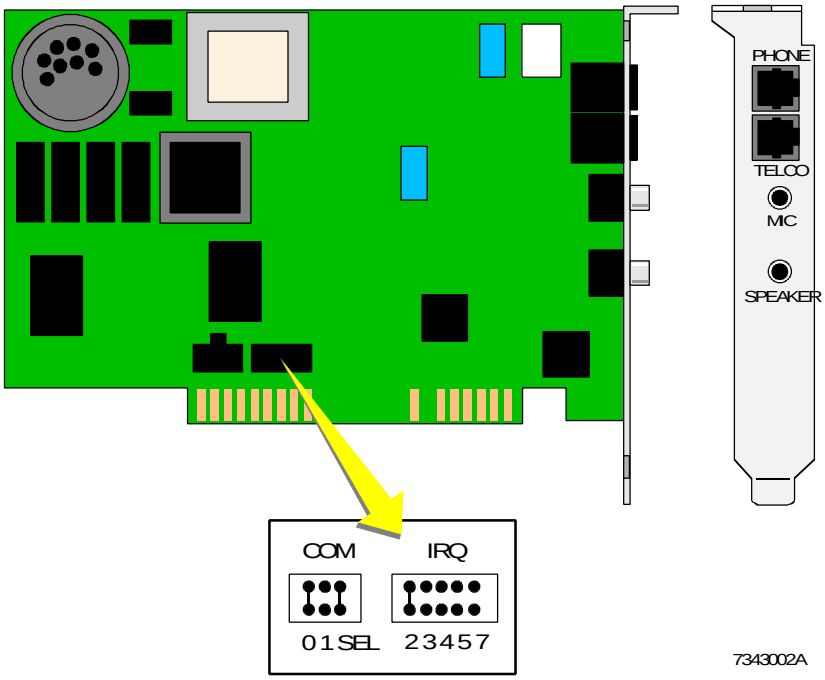
3.1.1. Input and Output Connections

The US Robotics VI Voice 33.6Kb Card connects to the ISA BUS. The rear of the card has two connectors. The PHONE connector is for an analog phone output. The TELCO connector is for the analog telephone line input.

CAUTION: Connection to a digital phone system can cause permanent damage to the modem.

The remaining input connections, MIC and SPEAKER, are not to be used with the GEN•S Workstation.

Figure 3-1: US Robotics VI Voice 33.6Kb Card Hardware Configuration



3.1.2. US Robotics VI Voice 33.6Kb Card Software Installation and Configuration

The modem is configured during installation of RCS software. For this modem select US ROBOTICS SPORTSTER 28800 V34.

4. MULTI-PORT SERIAL CARD(S)

The Multi-port Serial Card manages serial communication between the GEN•S Workstation, the GEN•S Analytical Station(s), GEN•S SM(s) and host computer(s).

Table 4-1: Multi-port Serial Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operation System	GEN•S Workstation
Equinox SS8-1 (4.1)	N/A	EQN.SYS, 1.05b, (5/17/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1

To verify the version of a driver:

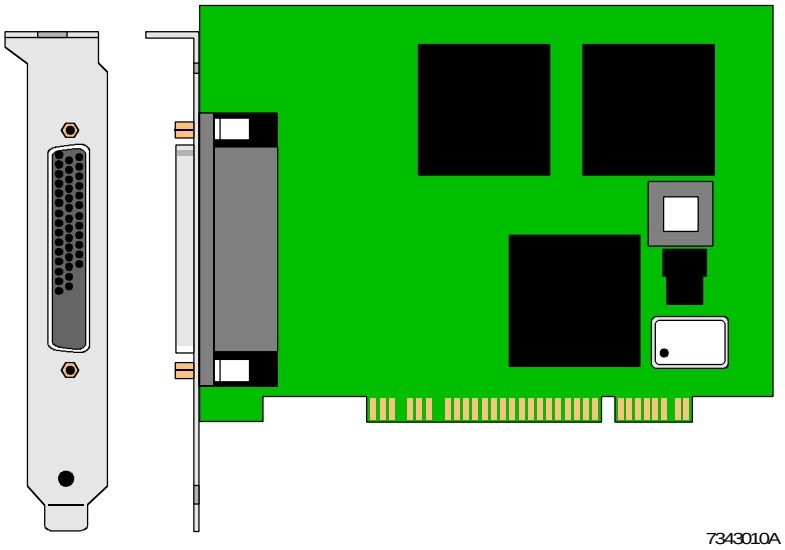
1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

4.1. Equinox SS8-1 Card

4.1.1. Input and Output Connections

The Equinox SS8-1 Card connects to the ISA bus. There is one connector on the rear of the card which connects to a cable split with four RS232 connectors.

Figure 4-1: Equinox SS8-1 Card Hardware Configuration



There is no hardware configuration for this card.

4.1.2. Equinox SS8-1 Card Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM.
- Equinox SS8-1 card installed.
- Formatted Blank 3.5 HD floppy disk.

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.
2. Insert the blank floppy in drive A:.
3. Copy “H:\ADMS\DRV\SERIAL\EQUINOX*.*” to “A:\“.
4. For Windows NT 3.51 choose CONTROL PANEL from the MAIN group. For Windows NT 4.0 choose CONTROL PANEL the SETTINGS group.
5. Choose NETWORK from CONTROL PANEL.
6. For Windows NT 3.51 at NETWORK SETTINGS screen choose ADD ADAPTERS. For Windows NT 4.0 choose the ADAPTERS tab then choose ADD.

7. For Windows NT 3.51 select <OTHER> REQUIRES DISK FROM MANUFACTURER as the NETWORK ADAPTER then choose CONTINUE. For Windows NT 4.0 choose HAVE DISK.

8. Enter “A”\” for the default directory then choose OK.

9. Choose OK to accept the default selection EQUINOX SST SERIAL DRIVER FOR WINDOWS NT VERSION 3.23H INTEL. For Windows NT 3.51 choose OK to confirm.

10. Choose OK at SETUP MESSAGE that driver is installed.

11. For Windows NT 3.51 continue at step 3 of the Equinox Software Configuration. For Windows NT 4.0 continue at step 4 of the Equinox Software Configuration.

4.1.3. Equinox SS8-1 Card Software Configuration

Required Resources:

- Equinox SS8-1 card installed including software

1. For Windows NT 3.51 choose CONTROL PANEL from the MAIN group. For Windows NT 4.0 choose CONTROL PANEL the SETTINGS group.

2. Choose NETWORK .

3. Select the Equinox SST Adapter as the INSTALLED ADAPTER CARD then choose CONFIGURE.

4. Select COM 4 for the first COM Port and 0xd0000 for the ISA Memory Block. For Windows NT 4.0 click SNMP DISABLED. Choose CONTINUE.

5. For Windows NT 3.51 choose OK at the NETWORK SETTINGS screen. For Windows NT 4.0 choose OK at the EQUINOX INSTALL INFORMATION promt then choose CLOSE at the NETWORK screen.

6. For Windows NT 3.51 choose RESTART NOW. For Windows NT 4.0 choose YES to restart.

5. NETWORK CARD(S)

Network cards act as the physical interface or connection between the computer and the network cable. The network card translates data between the format used by the computer and the format transmitted over a network cable. The network card also controls the flow of this data.

Table 5-1: Network Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operation System	GEN•S Workstation
3 Com 3C590-Combo (5.1)	N/A	Driver: EL59X.SYS, V1.15, (6/24/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D
3 Com 3C900-Combo (5.2)	N/A	EL90X.SYS, V1.1 (6/21/96), [December 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1

To verify the version of a driver:

1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

5.1. 3 Com EtherLink 3C590 PCI Card

5.1.1. Input and Output Connections

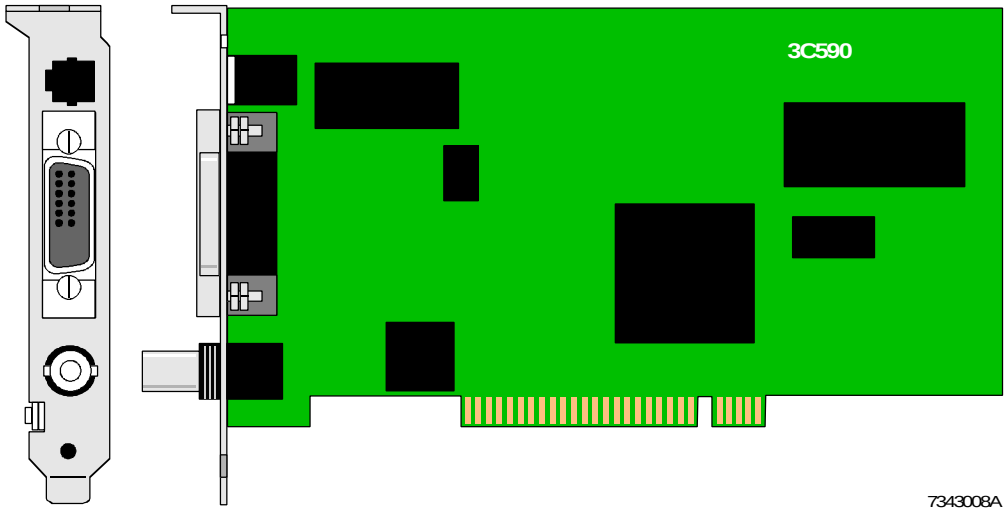
The 3 Com EtherLink 3C590 PCI Card connects to the PCI bus.

The rear of the card has three network connectors. Table 5.1 lists the correct cable and connector for each.

Table 5-2: Connectors for the 3 Com EtherLink 3C590 PCI Card

Location	Cable Type	Connector	Transceiver Type
Top	Twisted-pair	RJ-45	On-board TP
Center	Thick coaxial	AUI	External
Bottom	Thin coaxial	BNC	On-board coax

Figure 5-1: 3 Com EtherLink 3C590 Hardware Configuration



There is no hardware configuration for this card.

5.1.2. 3 Com EtherLink 3C590 PCI Card Software Installation

Required Resources:

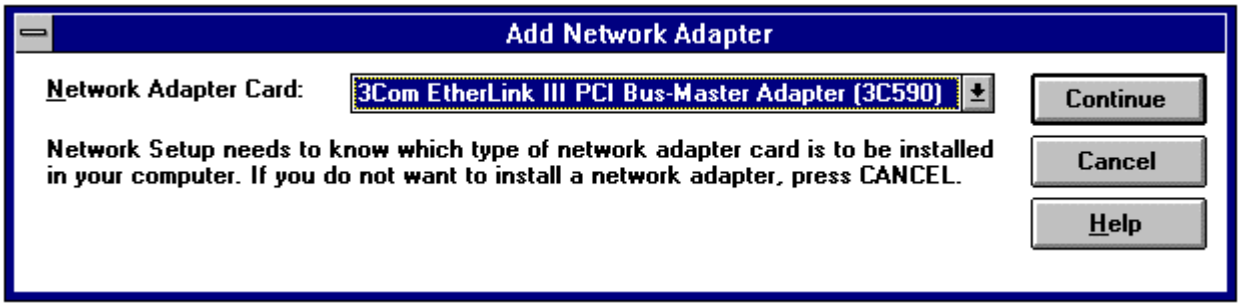
- GEN•S Workstation Installation and System Help CD-ROM
- Com 3C590 card installed

Windows NT 3.51

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.
2. Choose CONTROL PANEL from the MAIN group.
3. Choose NETWORK from CONTROL PANEL.
4. Choose ADD ADAPTER.

5. Select 3Com EtherLink PCI BUS-MASTER ADAPTER (3C590) then choose Continue.

Figure 5-2: 3 Com EtherLink 3C590 Software Configuration


Add Network Adapter
Network Adapter Card:
3Com EtherLink III PCI Bus-Master Adapter (3C590)
Network Setup needs to know which type of network adapter card is to be installed in your computer. If you do not want to install a network adapter, press CANCEL.
Continue
Cancel
Help

1. Choose CONTINUE with the directory “H:\i386\” selected.
2. Choose OK.
3. Choose RESTART NOW.

Windows NT 4.0

1. The installation is done during the installation of the operating system.

5.2. 3 Com EtherLink III 3C900-Combo

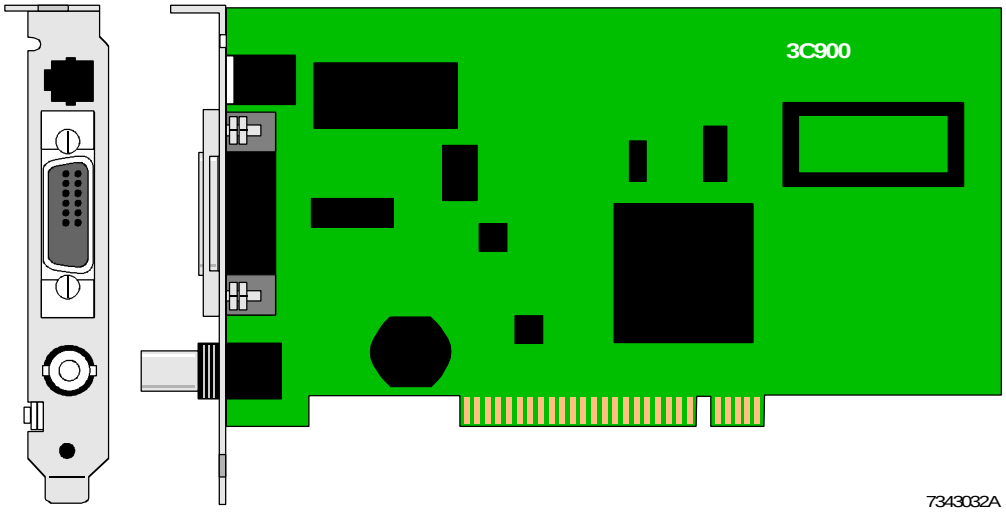
5.2.1. Input and Output Connections

The 3 Com EtherLink III 3C900 PCI Card connects tot he PCI bus. The rear of the card has three network connectors. Table 5.3 lists the correct cable and connector for each network connector.

Table 5.2-3: Connectors for the 3 Com EtherLink 3C900 PCI Card

Location	Cable Type	Connector	Transceiver Type
Top	Twisted-pair	RJ-45	On-board TP
Center	Thick coaxial	AUI	External
Bottom	Thin coaxial	BNC	On-board coax

Figure 5.2-1: 3 Com EtherLink 3C900 Hardware Configuration



5.2.2. 3 Com EtherLink 3C900 PCI Card Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- Com 3C900 card installed
- Formatted Blank 3.5 HD floppy disk.

Windows NT 3.51

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.
2. Insert the blank floppy in drive A:.
3. Choose FILE MANAGER from the MAIN group.
4. Choose COPY from the FILE pull down menu.
5. Enter “H:\ADMS\DRV\NETWORK\3C900“ at FROM and “A:\” at TO, then choose OK.
6. Close FILE MANAGER.

7. Choose CONTROL PANEL from the MAIN group.
8. Choose NETWORK from CONTROL PANEL
9. If Network setting prompt that WINDOWS NT NETWORKING IS NOT INSTALLED APPEARS, choose YES.
10. Choose CONTINUE to accept “H:\I386\” as the default directory.
11. Choose DO NOT DETECT.
12. Choose CONTINUE to detect card manually.
13. Select <OTHER> (REQUIRES DISK FROM MANUFACTURER), then choose CONTINUE.
14. Enter “A:\3c900\” at the directory prompt then choose OK .
15. Select 3 COM ETHERLINK XL ADAPTER (3C900), then choose OK.
16. Select NETBEUI TRANSPORT ONLY, then choose CONTINUE.
17. Choose OK at NETWORK SETTINGS screen.
18. Choose OK to accept the default WORKGROUP called WORKGROUP at the DOMAIN/WORKGROUP SETTINGS screen.
19. Choose ICON above RESTART COMPUTER, then remove the disk from Floppy A:.

Windows NT 4.0

1. The installation is done during the installation of the operating system.

5.2.3. 3 Com EtherLink 3C900 PCI Card Software Configuration

1. There is no software configuration for this card.

6. SCSI INTERFACE CARD(S)

The SCSI interface card provides a high-speed interface for connection of an archive device to the GEN•S Workstation.

Table 6-1: SCSI Interface Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operation System	GEN•S Workstation
Adaptec AHA-2920	BIOS 2E00	FD16_700.SYS, (Windows NT 3.51 kernel), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B
Adaptec AHA-2920C	N/A as removed from the card to prevent boot delay.	Adaptec CHIM Family SCSI Miniport version 2.11	- NT Workstation 4.0 w/ Service Pack 3	2A2 2B 2B1

To verify the version of a driver:

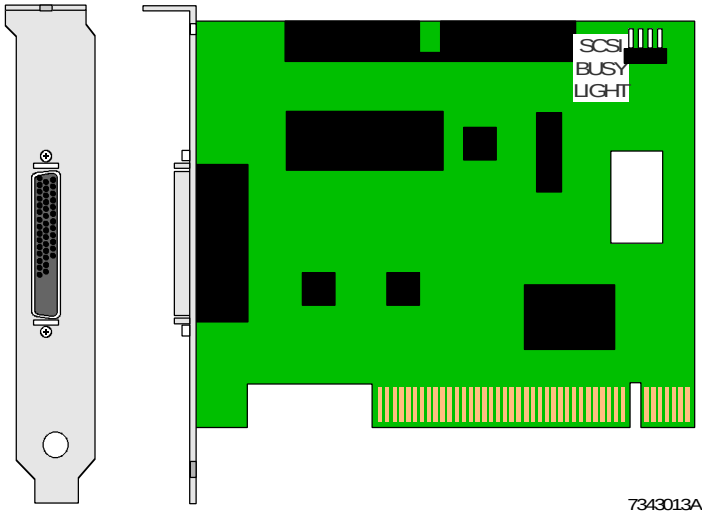
1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

6.1. Adaptec AHA-2920 Card

6.1.1. Input and Output Connections

The Adaptec AHA-2920 Card connects to the PCI BUS. The rear of the card has one connector that is used to connect a SCSI cable for the external archive device.

Figure 6-1: Adaptec AHA-2920 Card Hardware Configuration



There is no hardware configuration for this card.

6.1.2. Adaptec AHA-2920 Card Software Installation

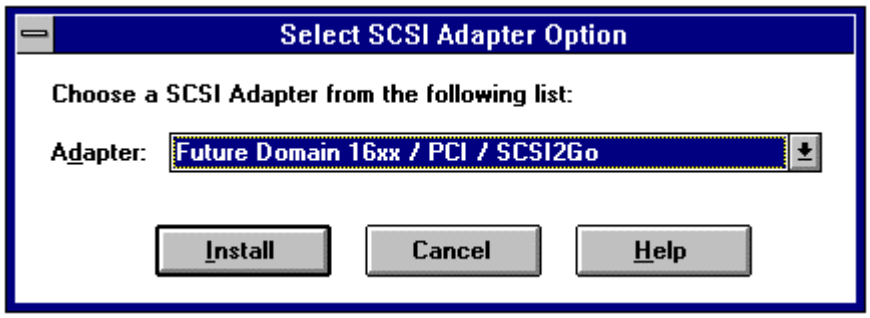
Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- Adaptec AHA-2920 Card installed with hardware configured

Windows NT 3.51

1. Choose SETUP from the MAIN group.
2. Select ADD/REMOVE SCSI ADAPTERS from the OPTIONS pull-down-menu.
3. Select FUTURE DOMAIN 16XX / PCI / SCSO2GO then choose INSTALL.
4. Accept the default directory “H:\I386\” by choosing INSTALL.
5. Choose CLOSE then close WINDOWS NT SETUP.

Figure 6-2: Adaptec AHA-2920 Card Selection Screen



Windows NT 4.0

1. The installation is done during the installation of the operating system.

6.1.3. Adaptec AHA-2920 Card Software Configuration

1. There is no software configuration for this card.

7. SOUND CARD(S)

The sound card provides an amplified sound output suitable for speakers or headphones. The sound card receives input from the system card and directly from the CD player. The selection of the input that is amplified and placed on the output is controlled by software.

Table 7-1: Sound Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operation System	System Card BIOS	GEN•S Workstation
Creative Labs Sound Blaster 16 PnP	Model CT2950	SB16SND.SYS, 2.1.0.1, (6/12/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	- Release 727091396 - Release 727032797 - Release 727072997	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1
Creative Labs Sound Blaster 16 PnP	Model CT2980	SB16SND.SYS, 2.1.0.1, (6/12/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	- Release 727091396 - Release 727032797 - Release 727072997	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1
Creative Labs Sound Blaster 16 PnP	Model CT2960	SB16SND.SYS, 2.1.0.1, (6/12/96), [September 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	- Release 727072997	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1

To verify the version of a driver:

1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct.

7.1. Creative Labs Sound Blaster® 16 PnP Card

7.1.1. Input and Output Connections

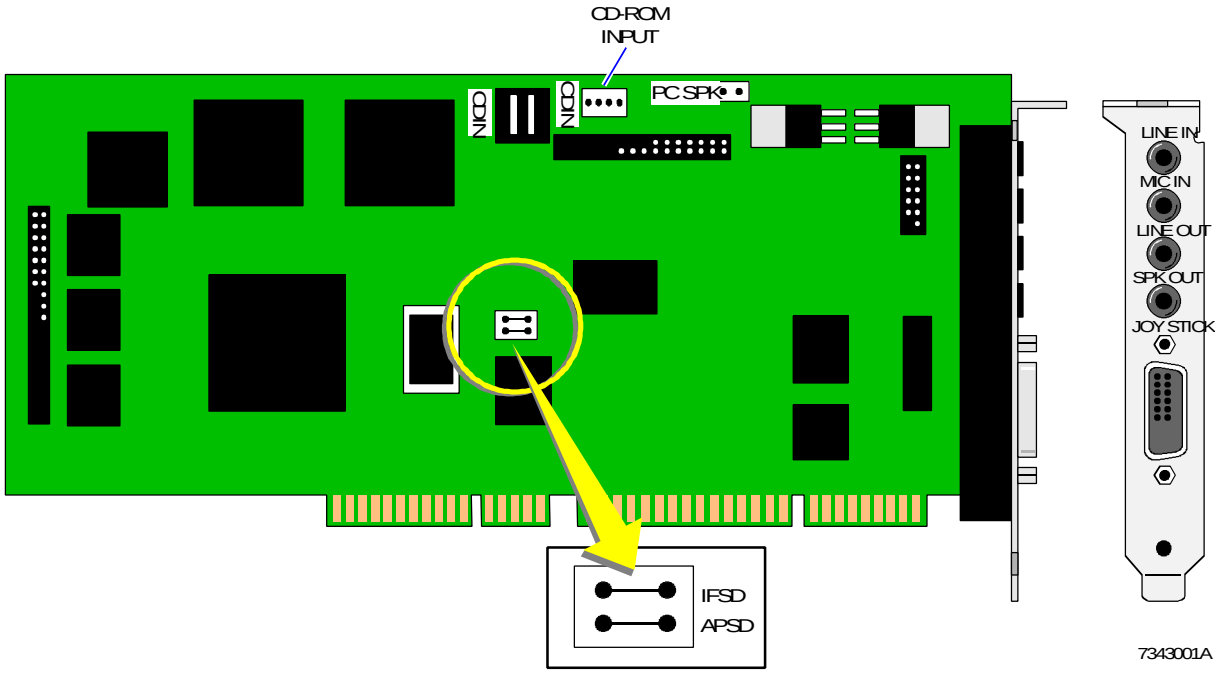
The Creative Labs Sound Blaster® 16 PnP Card connects to the ISA bus.

The rear of the card has four connectors, which are listed below:

- LINE IN. The line in jack allows an audio device to be connected to the sound card for recording from the computer. (This connection is not currently used).
- MC IN. The microphone in jack allows a microphone to be connected to the sound card for recording from the computer. (This connection is not currently used).
- LINE OUT. The line out jack bypasses the amplifier on the sound card and is used for speaker systems that contain amplifiers. (This connection is not currently used).
- SPK OUT. The speaker out jack provides a maximum of four watts per channel to four-ohm speakers and two watts per channel to two-ohm speakers.
- JOYSTICK. (This input connection is not currently used.)

There is also an input on the card for audio directly from the CD-ROM.

Figure 7-1: Creative Labs Sound Blaster 16PnP Card Hardware Configuration



The CD-ROM input is connected to the audio cable from the CD-ROM drive.

7.1.2. Creative Labs Sound Blaster® 16 PnP Card Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- Creative Labs Sound Blaster® 16 PnP Card installed with hardware configured

1. For Windows NT 3.51 choose CONTROL PANEL from the MAIN group. For Windows NT 4.0 choose CONTROL PANEL the SETTINGS group.

2. For Windows NT 3.51 choose DRIVERS from CONTROL PANEL then choose ADD. For Windows NT 4.0 choose MULTIMEDIA from CONTROL PANEL then choose ADD.

3. For Windows NT 3.51 select UNLISTED OR UPDATED DRIVER, then choose OK..

4. For Windows NT 3.51 enter “H:\ADMS\DRV\SOUND\CLS16PNP”, then choose OK..

5. Select CREATIVE TECH. SOUND BLASTER 16, then choose OK..

6. For Windows NT 3.51 choose NEW at DRIVER EXISTS prompt. For Windows NT 4.0 enter H:\I386 then choose OK at the file location prompt.

7. For Windows NT 3.51 choose OK at SOUND BLASTER 16 CONFIGURATION to accept AUTO CONFIGURATION set to ENABLE (the rest of the options are grayed out and cannot be modified. For Windows NT 4.0 choose CONTINUE with I/O ADDRESS 220 selected.

8. For Windows NT 3.51 choose RESTART NOW. (This procedure also configured the software therefore procedure 7.1.3 does not need to be completed.)

9. For Windows NT 4.0 choose OK with INTERRUPT 5, DMA CHANNEL 1, DMA CHANNEL 1 (16 BIT), and MPU401 I/O address 330 selected then choose RESTART NOW.

7.1.3. Creative Labs Sound Blaster® 16 PnP Card Software Configuration

Required Resources:

- Creative Labs Sound Blaster® 16 PnP Card installed including software

1. For Windows NT 3.51 choose CONTROL PANEL then DRIVERS. For Windows NT 4.0 choose MULTIMEDIA from CONTROL PANEL then select the DEVICES tab.

2. For Windows NT 3.51 select CREATIVE TECH. SOUND BLASTER 16 then choose SETUP. For Windows NT 4.0 choose AUDIO FOR CREATIVE LABS SOUND BLASTER 16 then choose PROPERTIES.

3. For Windows NT 3.51 select: AUTO CONFIGURATION set to ENABLE, then choose OK (the rest of the options are grayed out and cannot be modified).

4. For Windows NT 4.0 choose SETTINGS with USE AUDIO FEATURES ON THIS DEVICE selected. For Windows NT 4.0 choose OK with INTERRUPT 5, DMA CHANNEL 1, DMA CHANNEL 1 (16 BIT), and MPU401 I/O address 330 selected then choose CONTINUE with I/O ADDRESS 220 selected.

5. Choose RESTART NOW if you have changed any settings.

8. SYSTEM CARD(S)

The system card contains the processor, RAM, connectors for circuit cards and connections for peripheral devices.

Table 8-1: System Card(s) Configuration

Refer to Section 30.4, GEN•S Workstation Configuration

8.1. America Megatrends Atlas PCI-II Pentium™ ISA Card

8.1.1. Input and Output Connections

The America Megatrends Atlas PCI-II Pentium™ ISA Card contains a PCI and an ISA system bus that transfer data and control signals between the system card(s) and the circuit card(s). The PCI bus connectors are white and smaller than the black ISA bus connectors.

The EIDE controllers (located on the system card) control data transfer between the system card, the hard drive, and the CD ROM drive.

The mouse, keyboard, COM ports, power supply, floppy drive and power switch are also connected to the system card. There are two pin connectors for the speaker, reset switch, and LEDs on the computer base. The ROM for the BIOS is also contained on the system card. The BIOS battery is located inside an integrated circuit and cannot be replaced.

Table 8-2: Circuit Card Locations on the America Megatrends Atlas PCI-II Pentium ISA Card

Bus and Slot	Card
PCI-1	Video
PCI-2	Network
PCI-3	Equinox
PCI-4/ ISA-1 (shared)	SCSI-2 Controller (PCI)
ISA-2	Lightpen Controller
ISA-3	Modem
ISA-4	Sound

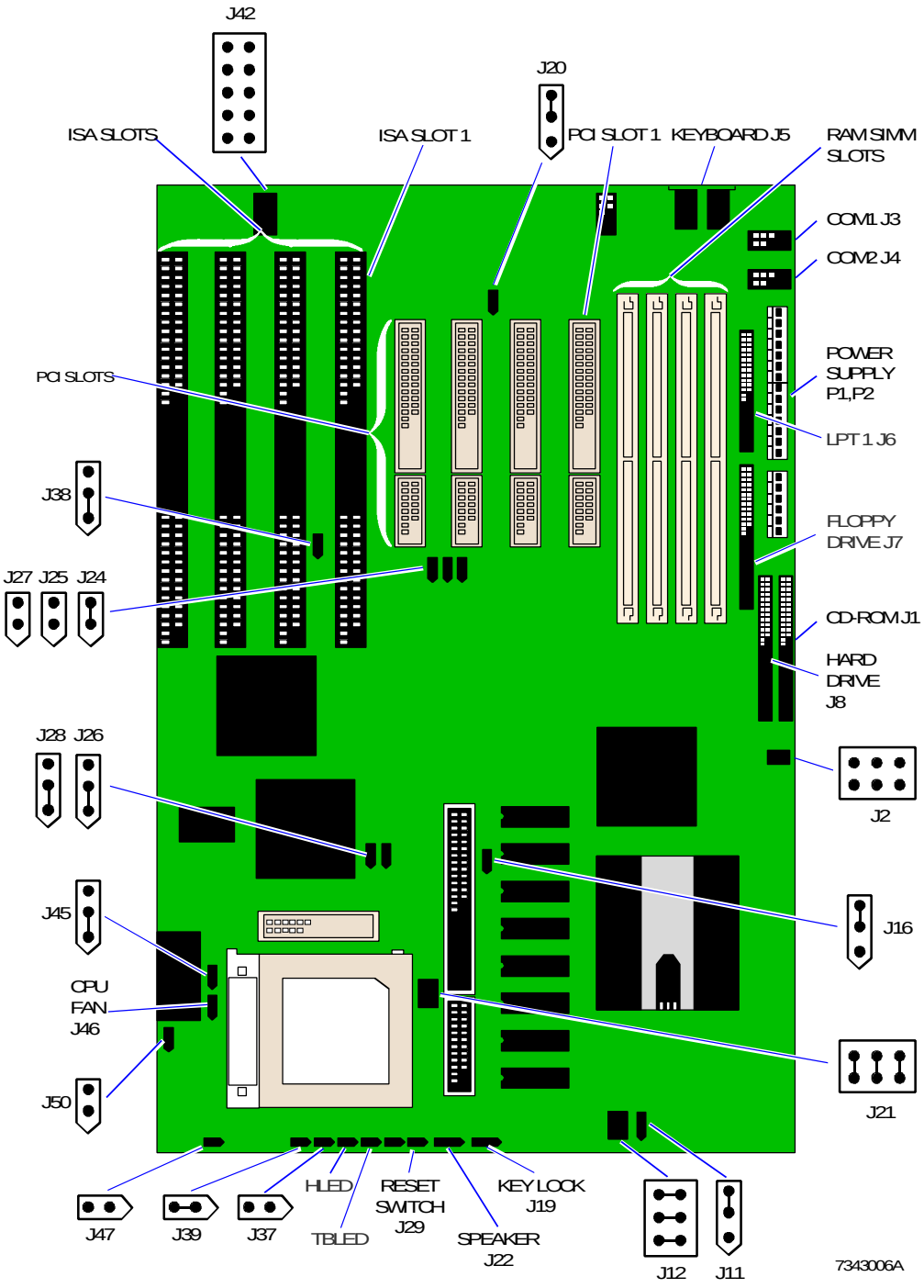


Figure 8-1: America Megatrends Atlas PCI-II Pentium ISA Card Hardware Configuration

Jumper settings for 120 MHz Pentium as shown. Jumper settings for 133 MHz Pentium require J25 to be shorted and J24 to be open

8.2. America Megatrends Atlas PCI-3 Pentium™ ISA Card

8.2.1. Input and Output Connections

The America Megatrends Atlas PCI-3 Pentium™ ISA Card contains a PCI and an ISA system bus that transfer data and control signals between the system card(s) and the circuit card(s). The PCI bus connectors are white and smaller than the black ISA bus connectors.

The EIDE controllers (located on the system card) control data transfer between the system card, the hard drive, and the CD ROM drive.

The mouse, keyboard, COM ports, power supply, floppy drive and power switch are also connected to the system card. There are two pin connectors for the speaker, reset switch, and LEDs on the computer base. The ROM for the BIOS is also contained on the system card. The BIOS battery is located inside an integrated circuit and cannot be replaced.

Table 8-3: Circuit Card Locations on the America Megatrends Atlas PCI-3 Pentium ISA Card

Bus and Slot	Card
PCI-1	Video
PCI-2	Network
PCI-3	Equinox
PCI-4/ ISA-1 (shared)	SCSI-2 Controller (PCI)
ISA-2	Lightpen Controller
ISA-3	Modem
ISA-4	Sound

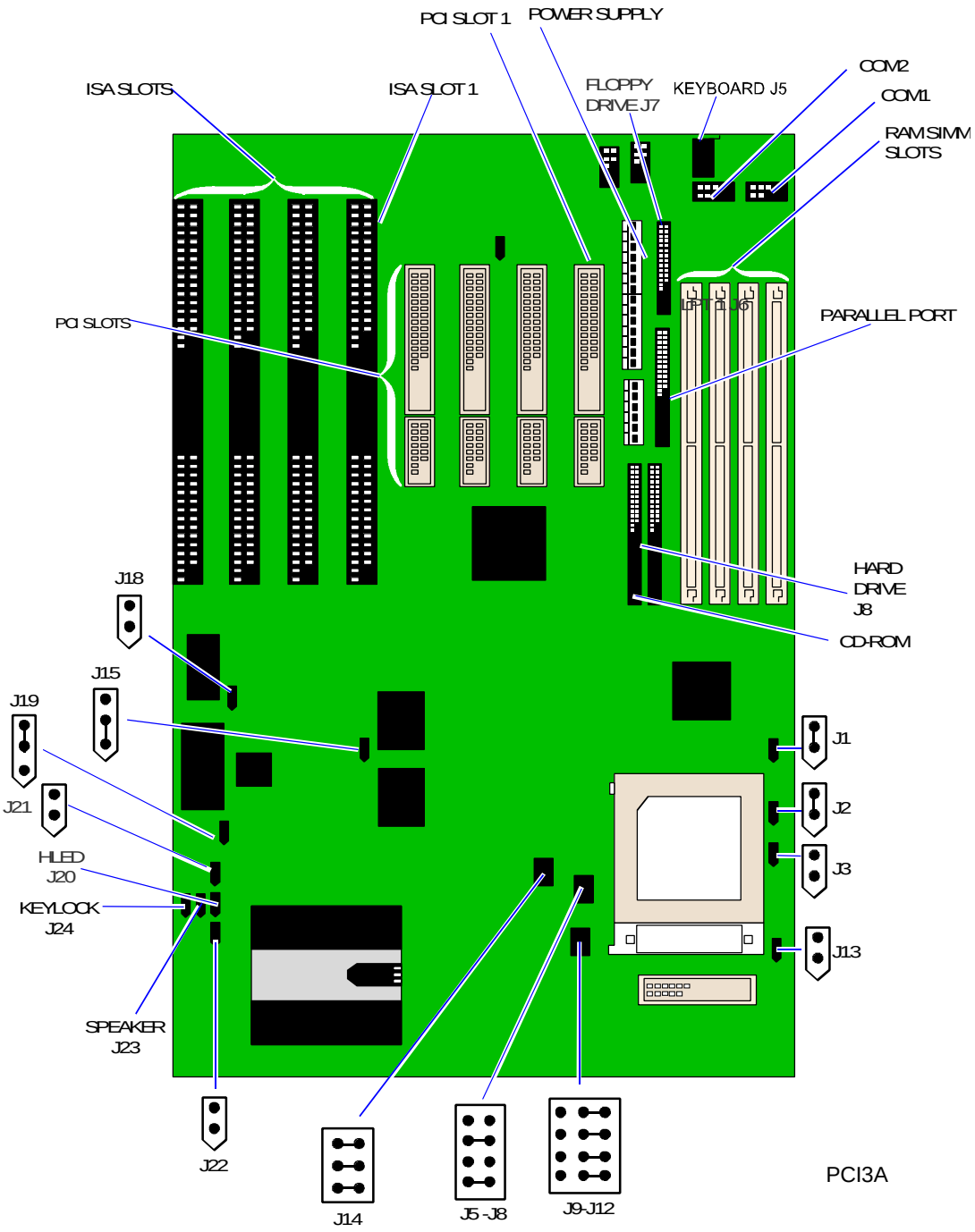


Figure 8-1: America Megatrends Atlas PCI-3 Pentium ISA Card Hardware Configuration

Jumper settings for 133 MHz Pentium as shown.

9. VIDEO DISPLAY CARD(S)

The video card sends video signals to the monitor.

Table 9-1: Video Display Card(s) Configuration

Card (Section)	Card BIOS or Version	Driver, [Date Released for use on GEN•S Workstation]	Operation System	GEN•S Workstation
STB Powergraph 64	2 MB Ram	S3.dll, V3.51 (5/26/95) [December 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	Beta B (1.962681) 1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1
STB Powergraph 64 Video	2 MB Ram	S3.dll, V3.51 (5/26/95) [December 1/96]	- NT Workstation 3.51 w/ Service Pack 4 - NT Workstation 4.0 w/ Service Pack 3	1A (1.963412) 1B (1.970151) 1C 1D 2A2 2B 2B1

To verify the version of a driver:

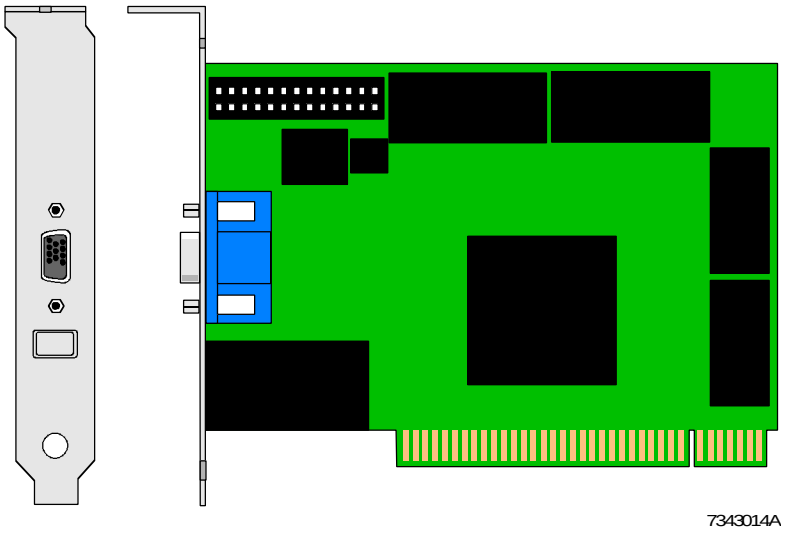
1. Select the file using FILE MANAGER or EXPLORER.
2. Choose PROPERTIES from the FILE pull down menu. For Windows NT 4.0 select the VERSION tab.
3. Verify that the version and date are correct..

9.1. STB Powergraph 64 Card

9.1.1. Input and Output Connections

The STB Powergraph 64 PCI Card connects to the PCI bus. The rear of the card has one connector that outputs the video signal.

Figure 9-1: STB Powergraph 64 Hardware Configuration



There is no hardware configuration for this card.

9.1.2. STB Powergraph 64 Card Software Installation

The software for this card is installed during the installation of Windows NT. It uses the S3 COMPATIBLE GRAPHICS ADAPTER driver.

9.1.3. STB Powergraph 64 Card Software Configuration

Required Resources:

- STB Powergraph 64 PCI card installed including software.

Windows NT 3.51

1. Choose DISPLAY from CONTROL PANEL.

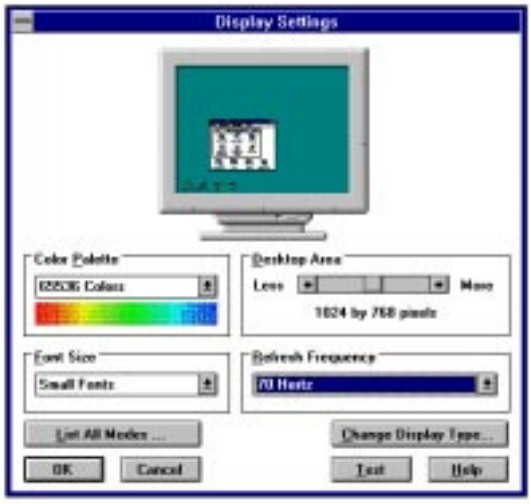
2. Select 1024 X 768 for desktop, 65536 colors as Color Palette, small fonts as Font Size and 70 Hz as Refresh Frequency then choose TEST (refer to Figure 9-2 shown later in this section).

3. Choose OK at TEST MODE screen.

4. After test is completed choose YES to confirmation that test was OK. (Choose NO and troubleshoot if the display is not clear and stable.)

5. Choose RESTART NOW for changes to take effect.

Figure 9-2: STB Powergraph 64 Software Configuration



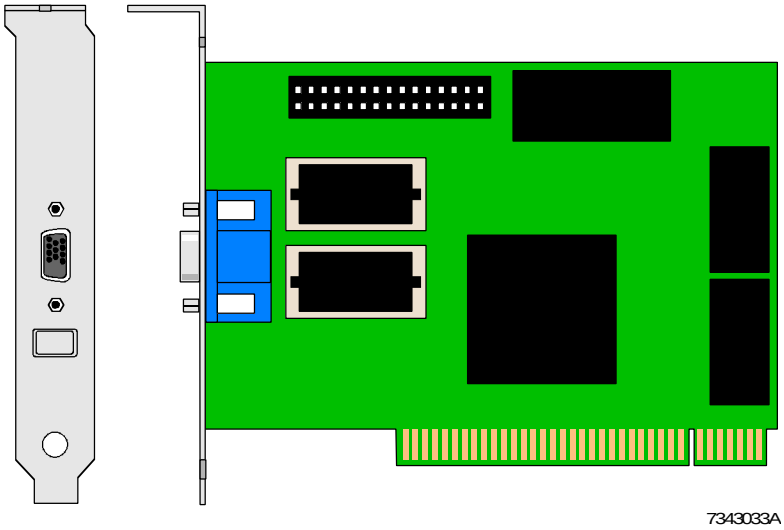
Windows NT 4.0

1. The installation is done during the installation of the operating system.

9.2. STB Powergraph 64 Video Card

The STB Powergraph 64 PCI Card connects to the PCI bus. The rear of the card has one connector that outputs the video signal.

Figure 9-3: STB Powergraph 64 Video Hardware Configuration



There is no hardware configuration for this card.

9.2.1. STB Powergraph 64 Video Card Software Installation

The software for this card is installed during the installation of Windows NT. It uses the S3 COMPATIBLE GRAPHICS ADAPTER driver.

9.2.2. STB Powergraph 64 Video Card Software Configuration

Use the procedure found in Section 9.1.3.

DRIVES

10. CD-ROM DRIVE(S)

CD-ROM drives are used to install the GEN•S Workstation Installation and the Operating System. It is also used to access the GEN•S Workstation Assistant, Tutorials, Service and Manufacturing procedures. The software configuration is automatically completed during the BIOS configuration.

Table 10-1: CD-ROM Drive(s) Configuration

Refer to Section 30.4, GEN•S Workstation Configuration

10.1. Sony CSD-760E CD-ROM

The Sony CSD-760E contains a self cleaning optical pickup lens. The optical pickup is locked when not in use to prevent damage when computer is being moved. The CD-ROM access speed is 4X.

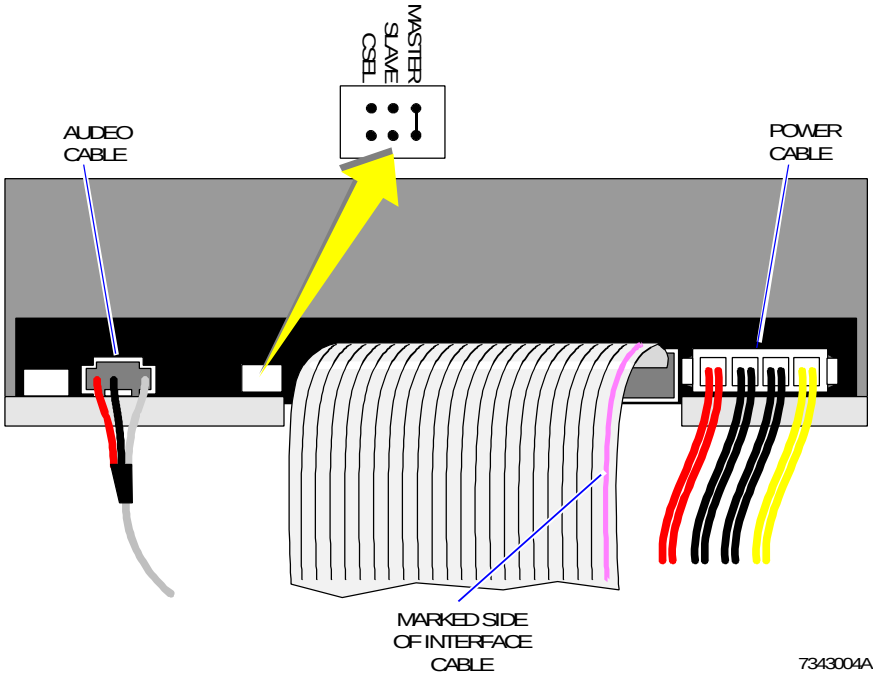
10.1.1. Input and Output Connections

The Sony CSD-760E CD-ROM has three connectors on the rear of the drive, as follows:

- **Interface Cable**. The interface connector connects to an EIDE controller on the system card.
- **Power Cable**. The power supply connector connects to the power supply.
- **Audio**. The audio out connector connects to the sound card.

The Sony CSD-760E CD-ROM also has a connector on the front of the drive for either speakers or headphones. There is also a volume control located on the front of the drive that controls the audio volume from the audio jack on the front of the drive.

Figure 10-1: Sony CSD-760E CD-ROM Hardware Configuration



10.2. Sony CDU-311 CD-ROM

The Sony CDU-311 contains a self cleaning optical pickup lens. The optical pickup is locked when not in use to prevent damage when the computer base is being moved. The CD-ROM access speed is 8X.

The hardware configuration is the same as the Sony CSD-760E CD-ROM defined Section 10.1.1. Refer to Section 10.1.1 for Input and Output Connections and Figure 10-1 for Hardware Configuration.

11. EXTERNAL ARCHIVE DEVICES

This section has been reserved for future options not yet available.

12. FLOPPY DRIVE(S)

Floppy drives are used to start the initial loading of the Operating System (OS) and to restore a damaged OS if it will not boot. They are also standard in almost all PC's which allows easy distribution of files between computers that are not networked. The software configuration is done during the BIOS configuration.

Table 12-1: Floppy Drive(s) Configuration

Refer to Section 30.4, GEN•S Workstation Configuration.

12.1. TEAC FD-235HF 3 1/2 Floppy Drive

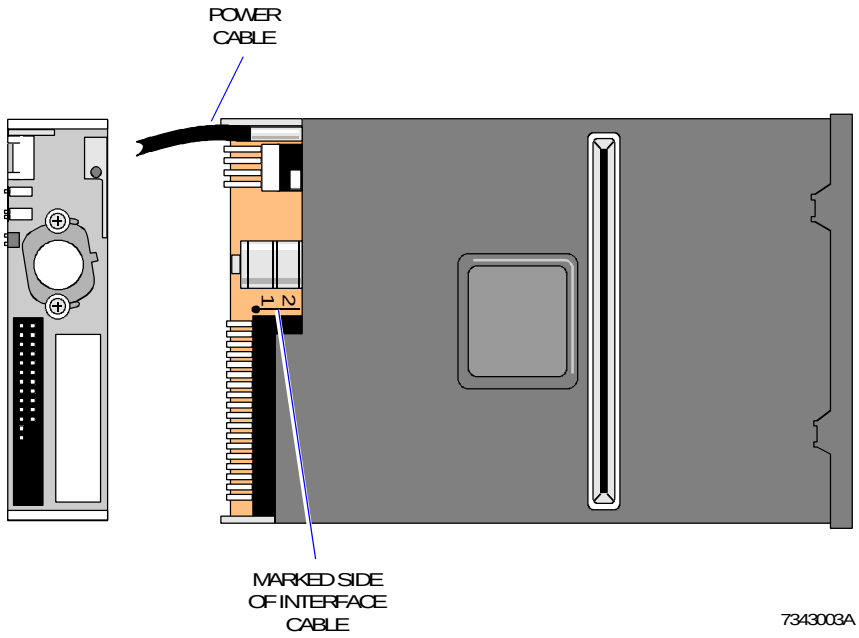
The TEAC FD-235HF is a standard floppy drive and will format and read disks up to 1.44MB.

12.1.1. Input and Output Connections

The TEAC FD-235HF has two connectors, as follows:

- **Interface Cable**. The interface connector connects to the floppy controller on the system card.
- **Power Cable**. The power supply connector connects to the power supply.

Figure 12-1: TEAC FD-235HF 3 1/2 Floppy Drive Hardware Configuration



There is no hardware configuration for this drive.

13. HARD DRIVE(S)

The hard drive is the main data storage location for the GEN•S Workstation Installation. The hard drive contains the Operating System, the GEN•S Workstation Installation, and sample data. The software configuration is done during the BIOS configuration.

Table 13-1: Hard Drive(s) Configuration

Refer to Section 30.4, GEN•S Workstation Configuration.

13.1. Quantum Fireball 1280 Hard Drive

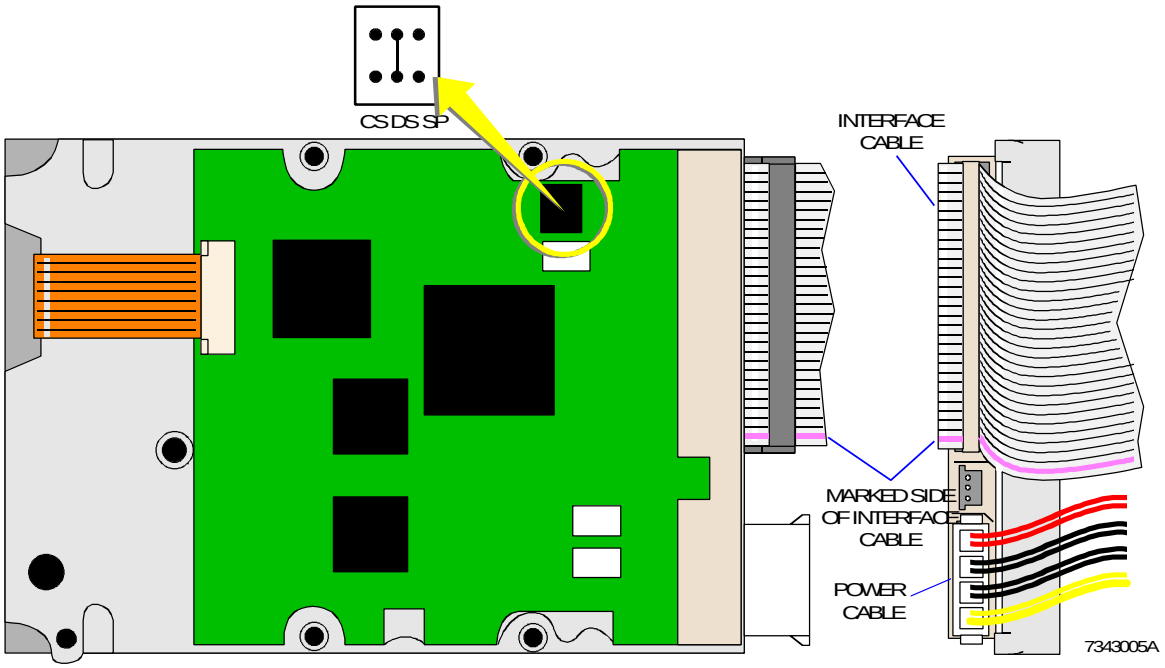
The Quantum Fireball 1280 is a 1.2 GB EIDE hard drive.

13.1.1. Input and Output Connections

The Quantum Fireball has two connectors, as follows:

- **Interface Cable**. The interface connector connects to an EIDE controller on the system card.
- **Power Cable**. The power supply connector connects to the power supply.

Figure 13-1: Quantum Fireball 1280 Hard Drive Hardware Configuration



13.2. Quantum Fireball QM33200TM-A Hard Drive (Quantum 3200AT P/N TM32A011)

The Quantum Fireball 3200AT is a 3.2 GB EIDE hard drive. Refer to Section 13.1.1 for Input and Output Connections and Figure 13-1 for Hardware Configuration.

MONITORS

14. MONITOR(S)

The monitor provides the operator with a visual display for the GEN•S Workstation Installation. For all monitors, the Touchscreen configuration can be found in Section 18 and the Light Pen configuration is in Section 16. The Operating System Software Settings for the monitor are in Section 9.

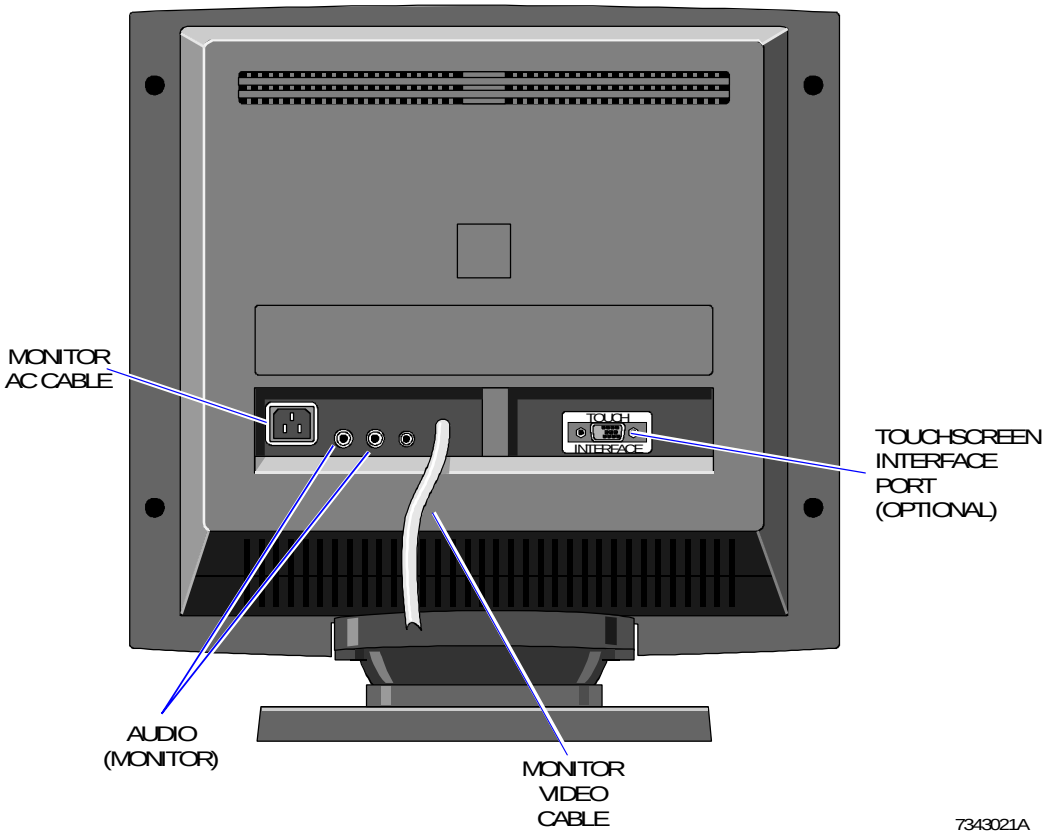
14.1. Nokia MicroEmission 17

The Nokia MicroEmission 17 has controls on the front of the monitor that are used to align, set the color convergence and center the display.

14.1.1. Input and Output Connections

The Nokia MicroEmission 17 has connections on the rear panel for ac power input, audio left and audio right. There is also a video cable attached to the monitor. If the Nokia MicroEmission includes the optional Elo Accutouch® Touchscreen there is also a connection for the touchscreen cable.

Figure 14-1: Nokia MicroEmission 17 Connections



The connections should be made as shown in Section 20, Installation of the GEN•S Workstation, of this document .

Figure 14-2: Nokia MicroEmission 17 Front Control Panel

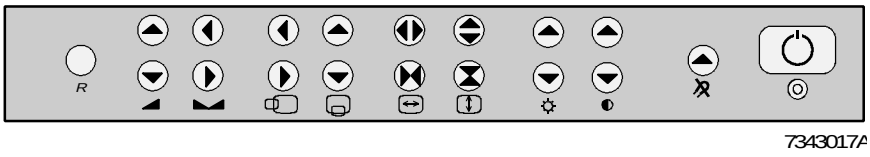


Table 14.1-2: Primary Adjustments for the Nokia MicroEmission 17

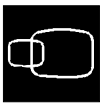
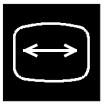
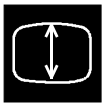
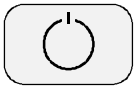
Number	Description	Function
	RESET (button)	Resets all settings to factory default
	Volume	Adjustment of the speaker volume
	Balance	Adjustment of the volume difference between speakers
	Horizontal Centering	Adjustment of Horizontal centering of display
	Vertical Centering	Adjustment of vertical centering of display
	Horizontal size	Adjustment of horizontal size of display
	Vertical size	Adjustment of vertical size of display
	Brightness	Adjustment for brightness of entire display
	Contrast	Adjustment for the difference between light and dark colors.
	Degaussing	Activates a demagnetization function which takes place automatically when the monitor is switched on. This function is not effective if used at intervals shorter than 15 minutes.
	Power Switch	Powers the monitor on or off when pressed.
	Power On LED	Lights to indicate when monitor is powered on.

Table 14.1-3: Secondary Adjustments for the Nokia MicroEmission 17

Number	Description	Function
	Trapezoid width	Adjustment to make the width of the lower side of the image equal with the upper side. (To use secondary functions first press both contrast buttons simultaneously. The monitor exits secondary mode 10 seconds after adjustment is done)
	Pincushion Correction	Straightens vertical lines if the picture has pincushion or barrel distortion. Compare the vertical edge of the image to the bezel during adjustment (To use secondary functions first press both contrast buttons simultaneously. The monitor exits secondary mode 10 seconds after adjustment is done)

14.2. ViewSonic EA771

The Nokia MicroEmission 17 has controls on the front of the monitor that are used to align, set the color convergence and center the display.

14.2.1. Input and Output Connections

The ViewSonic EA771 has connections on the rear panel for ac power input, microphone, audio left and audio right. There is also a video cable attached to the monitor. If the ViewSonic EA771 includes the optional Elo Accutouch® Touchscreen there is also a connection for the touchscreen cable. The microphone connection is not used.

The connections should be made as shown in Section 20, Installation of the GEN•S Workstation, of this document.

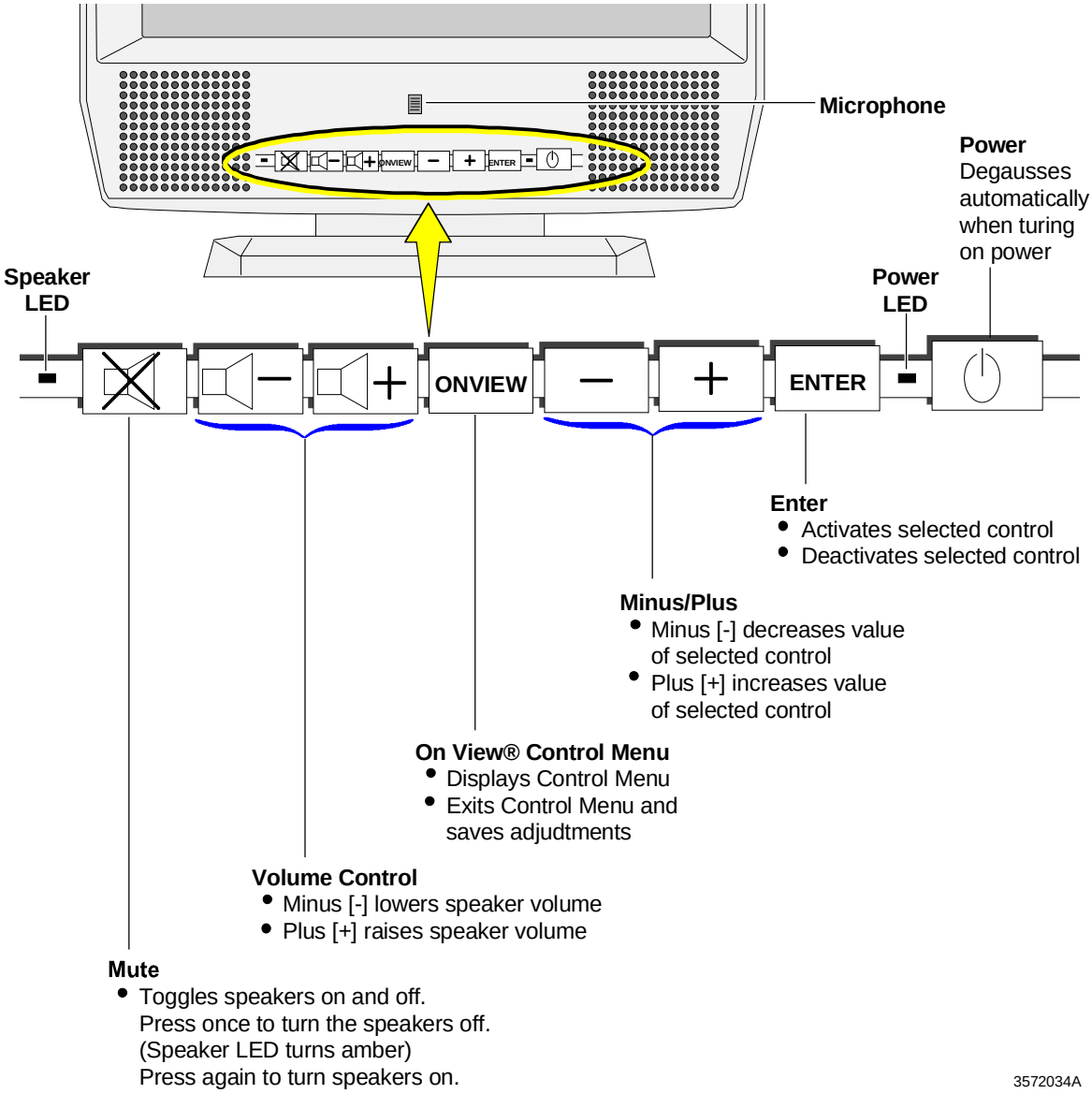


Figure 14-3: ViewSonic EA771 Front Control Panel

1. To display the Control Menu shown below, press the On View button. The screen automatically clears after 20 seconds.

2. To select a control, press the plus button repeatedly to scroll clockwise or the minus button to scroll counter-clockwise. Stop when the control icon you wan to adjust is highlighted in pink.
3. To activate the selected control, press the Enter button. The vertical bars near the center of the Control Menu will change from black to pink. For the color temperature control range the bars will change to multi-colored.

4. To adjust the screen image, press the plus button or minus button. The number of vertical bars increases or decreases accordingly.

5. To deactivate the selected control and save your adjustments, press the Enter button. The vertical bars near the center of the Control Menu will change to black.

6. To exit the Control Menu and save all settings press the OnView button.

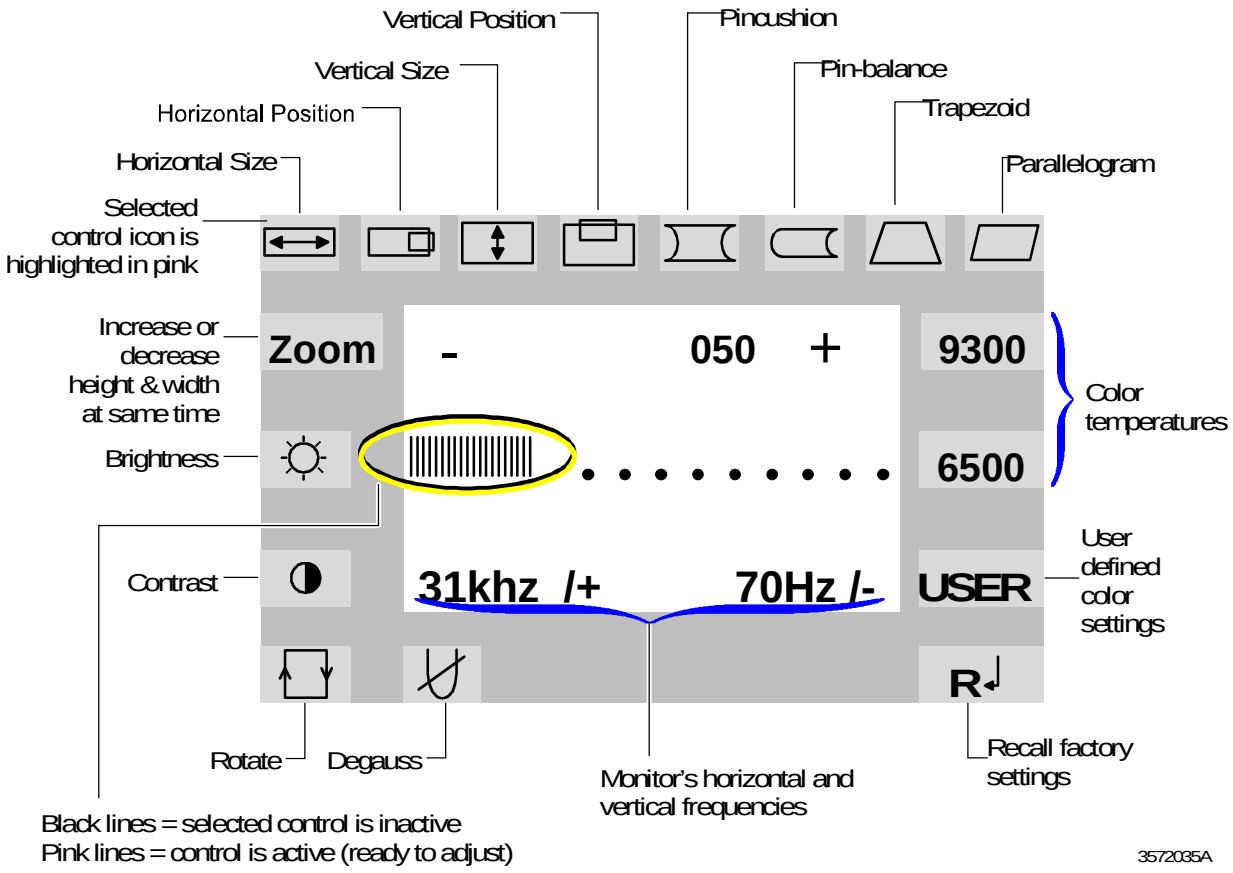
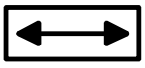
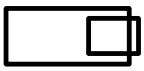
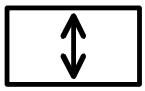
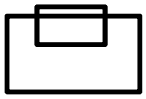
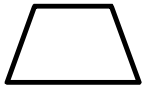
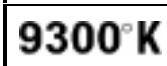
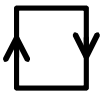


Table 14.1-4: On Screen Adjustments for the ViewSonic EA771

Number	Description	Function
	Horizontal Size	This control adjusts the width of the screen image.
	Horizontal Position	This control adjusts the screen image left or right.

Number	Description	Function
	Vertical Size	This control adjusts the height of the screen image.
	Vertical Position	This control adjusts the screen image up or down.
	Pincushion	This control straightens the vertical sides of the screen.
	Pin-Balance	This control adjusts curves the screen's vertical edges to the left or right.
	Trapezoid	This control adjusts the screen image for unevenness between the top and bottom width.
	Parallelogram	This control skews the screen image vertical sides left or right.
	Color settings	This is the color default and should not be modified.
	Color settings	Do not use.
	Color settings	Allows custom color configuration. Do not use.
	Recall	This control returns all settings to the defaults.
	Degauss	Use this control when irregular colors appear on the screen image. Wait at least 20 minutes before degausing. The daguasing is done automatically every time the monitor is powered up.
	Rotate	This control rotes the screen clockwise or counter-clockwise.
	Contrast	This control adjust the contrast between the background and the foreground.
	Brightness	This control adjust the brightness of the screen imaage.
	Zoom	This control decreases or increases the height and width of the screen image simultaneously.

DATA INPUT DEVICES

15. BARCODE READER(S)

The barcode reader allows an operator to quickly enter values without the possibility of transcription errors.

15.1. PSC QUICKSCAN™ CCD Barcode Scanner

The PSC QUICKSCAN CCD Barcode Scanner is a hand held scanner that is used to read values directly into the GEN•S Workstation Application. Instructions for use of the barcode scanner are contained in the GEN•S Workstation Application customer help screens.

WARNING: Risk of personal injury. The scanner uses a low-power, visible laser diode which could damage your eyes. Do not stare directly into the beam.

15.1.1. Input and Output Connections

The PSC QUICKSCAN CCD Barcode Scanner has one cable that is in a Y configuration.

The center of the Y connects to the barcode scanner. The male PS2 keyboard connector connects to the PS2 keyboard connector of the computer base keyboard port. The female keyboard connector of the Y cable connects to the keyboard.

15.1.2. Hardware Configuration

There is not any hardware configuration for the PSC QUICKSCAN CCD Barcode Scanner.

15.1.3. Software Configuration

Software configuration is completed by reading barcode labels to program the barcode reader. Instructions for programming the barcode reader are contained in the GEN•S Workstation Application customer help screens. The tables below are a duplicate of the information contained in the help screens.

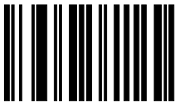
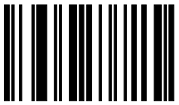
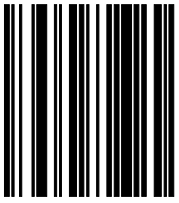
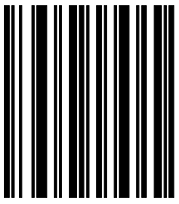
When you hear two beeps, the scanner has accepted the configuration information. All character lengths must be two digit, (i.e., a length of 3 would require the 0 barcode be read then the 3 barcode be read).

Table 15.1-1: Default PSC QUICKSCAN CCD Barcode Scanner Configuration

Option	Default
Automatic tab to next field	Enabled
Code 39	Enabled Check Character: Enabled; Do not transmit Minimum character length: 03 Maximum character length: 09 Start/Stop character: Do not transmit
Code I-2 of 5 (AIM®)	Enabled

Option	Default
	Check Character: Enabled; Do not transmit Minimum character length: 04 Maximum character length: 11
Codabar (standard NW-7)	Enabled Check Character: AIM Checksum Algorithm Enabled; Do not transmit Minimum character length: 03 Maximum character length: 09 Start/Stop character: Do not transmit
Code 128	Enabled Check Character: Enabled; Do not transmit Minimum character length: 03 Maximum character length: 11

Table 15.1-2: Programming Code 39 Barcodes for the PSC QUICKSCAN CCD Barcode Scanner

Scan This Bar Code	For This Result
	Set minimum length for Code 39. After scanning this code, scan the appropriate two-digit selection to specify the desired length.
	Set maximum length for Code 39. After scanning this code, scan the appropriate two-digit selection to specify the desired length.
	Enable Full ASCII Code 39.
	Enable Code 39 checksum.

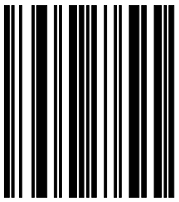
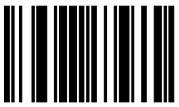
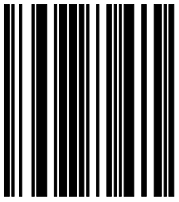
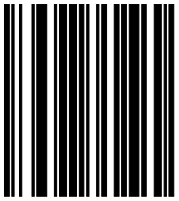
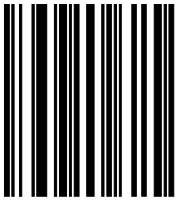
Scan This Bar Code	For This Result
	Disable Code 39 checksum

Table 15.1-3: Programming Interleaved 2-of-5 Barcodes for the PSC QUICKSCAN CCD Barcode Scanner

Scan This Bar Code	For This Result
	Set minimum length for Interleaved 2-of-5. After scanning this code, scan the appropriate two-digit selection to specify the desired length. Length must be multiple of two. All entries are rounded up to the next even number.
	Set maximum length for Interleaved 2-of-5. After scanning this code, scan the appropriate two-digit selection to specify the desired length. Length must be multiple of two. All entries are rounded up to the next even number.
	Enable (AIM) Interleaved 2-of-5 checksum.
	Disable (AIM) Interleaved 2-of-5 checksum.
	Enable Coulter Corporation Interleaved 2-of-5 checksum.

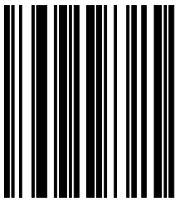
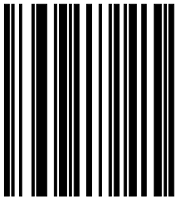
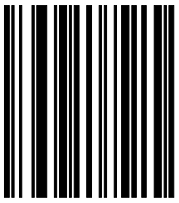
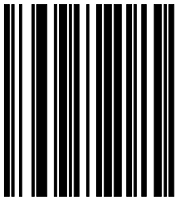
Scan This Bar Code	For This Result
	Disable Coulter Corporation Interleaved 2-of-5 checksum.

Table 15.1-4: Programming Codabar Barcodes for the PSC QUICKSCAN CCD Barcode Scanner

Scan This Bar Code	For This Result
	Set minimum length for Codabar. After scanning this code, scan the appropriate two-digit selection to specify the desired length.
	Set maximum length for Codabar. After scanning this code, scan the appropriate two-digit selection to specify the desired length.
	Enable (AIM) Codabar checksum.
	Disable Codabar checksum (disable all Codabar checksum techniques).
	Enable Coulter Corporation Codabar checksum.

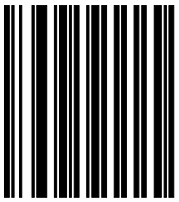
Scan This Bar Code	For This Result
	Enable NW-7 Japan Red Cross Codabar as follows: Check Character: Japan Red Cross Algorithm Enabled; Do not transmit Required data digits: 09 Start/Stop character: Do not transmit.

Table 15.1-5: Programming Code 128 Barcodes for the PSC QUICKSCAN CCD Barcode Scanner

Scan This Bar Code	For This Result
	Set minimum length for Code 128. After scanning this code, scan the appropriate two-digit selection to specify the desired length.
	Set maximum length for Code 128. After scanning this code, scan the appropriate two-digit selection to specify the desired length.

Table 15.1-6: Programming Default Configuration for the PSC QUICKSCAN CCD Barcode Scanner

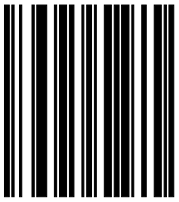
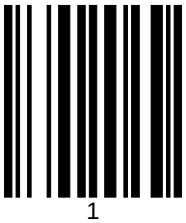
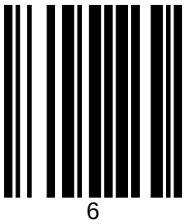
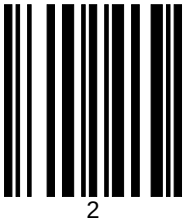
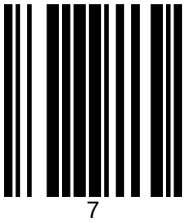
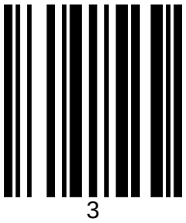
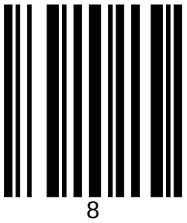
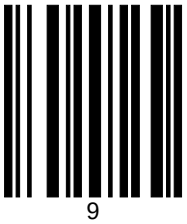
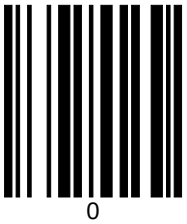
Scan This Bar Code	For This Result
	Reset to Coulter Corporation defaults.

Table 15.1-7: Numeric Barcodes for Configuration of the PSC QUICKSCAN CCD Barcode Scanner

 1	 6
 2	 7
 3	 8
4	 9
5	 0

16. LIGHT PEN(S)

The light pen simulates input from a mouse allowing an operator to select options. The light pen when combined with the keyboard allows an operator to choose buttons or icons.

16.1. FTG Light Pen

Section 2 of this document contains the calibration and software configuration settings for the light pen.

16.1.1. Input and Output Connections

The FTG Light Pen has one connector on a cord extension. The connector connects to an extension cable that connects to the light pen circuit card. The end of the light pen that is used to touch the computer screen contains a sensor that detects the refresh signal on the screen. This information is used to detect the position of the light pen therefore the brightness of the monitor can affect the sensitivity of the light pen.

16.1.2. Hardware Configuration

There is no hardware configuration required for the FTG Light Pen.

17. MOUSE

The mouse is used as a standard Windows pointing device.

17.1. PS/2 Compatible Mouse

This is a standard mouse with two buttons and a ball for tracking the operators movement of the mouse.

The mouse uses a mechanical motion of a ball to determine movement of the mouse. The sensitivity of the can be effected if the mouse requires cleaning. The cleaning procedure is in Section 28.1.5.1, Mouse Cleaning, of this document.

The Operating System has options for mouse operation located in the Control Panel menu.

17.1.1. Input and Output Connections

The BUS mouse has one connector on a cable extension. The connector connects to the system card PS/2 mouse port. The GEN•S Workstation uses a PS/2 mouse to allow the serial ports to be used for connections to other devices. The connection on the computer for the PS/2 mouse will not support a serial mouse.

17.1.2. PS/2 Mouse Hardware Configuration

There is no hardware configuration required for the PS/2 Compatible mouse. The connections should be made as shown in Section 25, GEN•S Workstation Installation of this document.

18. TOUCHSCREEN(S)

The touchscreen simulates input from a mouse allowing an operator to select options. The light pen when combined with the keyboard allows an operator to choose buttons or icons.

18.1. Elo Accutouch® Touchscreen

The sensitivity of the touchscreen can be effected if it requires cleaning. The cleaning procedure is in Section 28.1.3, Monitor Cleaning (Standard or Touchscreen), of this document.

18.1.1. Input and Output Connections

The Touchscreen is installed inside of the monitor with one external connector. The connector is connected to COM2 on the computer base using a cable supplied with the monitor.

18.1.2. Hardware Configuration

There is no hardware configuration required for the Touchscreen. The connections should be made as shown in the monitor section 14 and installation section 25 of this document .

18.1.3. Elo Accutouch Touchscreen Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM

Windows NT 3.51

1. Insert the GEN•S Workstation Installation and System Help CD-ROM in the CD-ROM drive.
2. Verify touchscreen cable is connected from monitor touchscreen connector to COM2.
3. Run “H:\ADMS\SETUP.EXE”.
4. At SELECT COMPONENTS, select TOUCHSCREEN DRIVERS only.
5. Select NEXT and follow installation instructions including restarting GEN•S Workstation.

Windows NT 4.0

1. The installation is done during the installation of the operating system.

18.1.4. Elo Accutouch Touchscreen Software Calibration

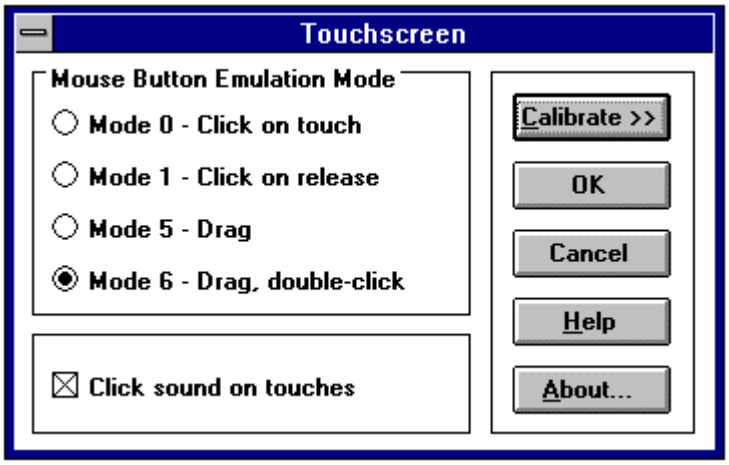
Required Resources:

- Touchscreen monitor installed including software

1. From CONTROL PANEL choose TOUCHSCREEN.
2. Verify MODE 6-DRAG, DOUBLE-CLICK and CLICK SOUND ON TOUCHES are selected.

3. Choose CALIBRATE and follow instructions.

Figure 18-1: Elo Accutouch Touchscreen Software Configuration Menu



SOFTWARE

19. BIOS CONFIGURATION(S)

During the computer boot sequence a software application called BIOS (Basic Input Output System), which is located in ROM (read only memory) on the system card, reads the information contained in CMOS and configures the CPU and other peripheral devices. CMOS is memory that is battery powered to store information about the computer system including drives and RAM.

Caution: Unbootable computer. The BIOS options are set before the computers are shipped and should not require modification. This section should only be used to confirm the correct settings during troubleshooting.

19.1. America Megatrends Atlas PCI-II and PCI-III

19.1.1. AMI BIOS Keyboard and Mouse functions

The first screen of this BIOS is a graphical MAIN MENU. It has a built in mouse driver so either a mouse or the keystrokes in table 19.1 can be used.

19.1.2. BIOS Access

To enter the CMOS BIOS Setup the Delete or DEL key must be pressed during the RAM MEMORY TEST screen that appears after power ON or when the computer is reset.

Table 19.1-1: AMI BIOS Key Functions

Keystroke	Action
<Tab>	Change or select a global field
<→>,<↑>,<←,> or <↓>	Change or select the current field
<Enter>	Perform an operation in the current field
+	Increment a value
-	Decrement a value
<Esc>	Abort any window function
<PgUp>	Return to the previous page
<PgDn>	Advance to the next page
<Home>	Returns to the beginning of text
<End>	Advance to the end of the text

BIOS Resetting To Default Values

1. Choose Optimal from the Default group then choose yes to restore old values which are the settings detailed in the following setup procedure.

19.1.3. AMI 727091396 and 727032797 Coulter GEN•S BIOS Configuration

This section lists all of the user definable BIOS settings.

19.1.3.1.Standard Setup

Allows the user to set the date and time, floppy drive types and hard drive parameters. It is divided into 6 sections.

Primary Master:

Type: Auto (Not installed, has 48 options)
LBA/Large Mode: On (Off or On)
Block Mode: On (Off or On)
32Bit Mode: On (Off or On)
PIO Mode: 4 (Auto, 0, 1, 2, 3, 4 or 5)

Primary Slave:

Type: Auto (Not installed, has 46 options)
LBA/Large Mode: On (Off or On)
Block Mode: On (Off or On)
32Bit Mode: Off (Off or On)
PIO Mode: Auto (Auto, 0, 1, 2, 3, 4 or 5)

Secondary Master:

Type: Auto (Not installed, has 46 options)
LBA/Large Mode: On (Off or On)
Block Mode: Off (Off or On)
32Bit Mode: Off (Off or On)
PIO Mode: 2 (Auto, 0, 1, 2, 3, 4 or 5)

Secondary Slave:

Type: Auto (Not installed, has 46 options)
LBA/Large Mode: On (Off or On)
Block Mode: On (Off or On)
32Bit Mode: Off (Off or On)
PIO Mode: Auto (Auto, 0, 1, 2, 3, 4 or 5)

Date/Time:

Current Data (User changes with + or - keys on the screen)

Floppy Drive A:

1.44 MB 3 1/2 (Not installed, 360 KB 5 1/4, 1.2 MB 5 1/4, 720 KB 3 1/2, 1.44 MB 3 1/2 or 2.88MB 3 1/2)

Floppy Drive B:

Not installed(Not installed, 360 KB 5 1/4, 1.2 MB 5 1/4, 720 KB 3 1/2, 1.44 MB 3 1/2 or 2.88MB 3 1/2)

19.1.3.2.Advanced Setup

Typematic Rate: Fast (Slow or Fast)
System Keyboard: Present (Absent or Present)
Primary Display: VGA/EGA (Absent, VGA/EGA, CGA 40x25, CGA 80x25, or Mono)
Mouse Support: Enabled (Enabled or Disabled)
Parity Check: Enabled (Disabled or Enabled)

Hit 'Del' Message Display: Disabled(Disabled or Enabled)
Wait for 'F1' If Error: Enabled (Disabled or Enabled)
Pause-on Configuration Screen: Disabled (Disabled, 2 Sec, 3 Sec, 4 Sec, 5 Sec, 6 Sec, 7 Sec or 8 Sec, 9 Sec, 10 Sec)
BootUp Number Lock: On(Off or On)
Password Check: Setup: (Setup or Always)

OS/2 Compatible Mode: Disabled (Disabled or Enabled)
Floppy Drive Seek: Enabled (Enabled or Disabled)
Floppy Drive Swap: Disabled (Enabled or Disabled)
Base Memory: 640KB (512KB or 640KB)
Quick Boot: Enabled (Disabled or Enabled)

BootUp Sequence: A:,C:, CD-ROM (C:,A:, CD-ROM or A:,C:, CD-ROM or CD-ROM, A:, C:)
Internal Cache (Disabled or Enabled)
External Cache: Enabled (Disabled or Enabled)
System BIOS Cacheable: Enabled (Disabled or Enabled)
Caching Controller: Absent (Absent or Present)

Video Shadow C000,32K: Cached (Disabled, Shadowed, or Cached)
Video Shadow C800,16K: Disabled (Disabled, Shadowed, or Cached)
Video Shadow CC00, 16K: Disabled, Disabled,(Shadowed, or Cached)
Video Shadow D000, 16K: Disabled (Disabled, Shadowed, or Cached)
Video Shadow D400, 16K: Disabled (Disabled, Shadowed, or Cached)

Video Shadow D800, 16K: Disabled (Disabled, Shadowed, or Cached)
Video Shadow DC00, 16K: Disabled (Disabled, Shadowed, or Cached)

19.1.3.3.Chipset Setup

Cache Module Type: Pipeline (Asynchronous, Burst or Pipeline)
DRAM Speed for EDO: N/A (grayed out)
DRAM Speed for Fast Page Mode: 70ns (60ns or 70 ns)
8Bit I/O Recovery Time: 3 BusClocks (8, 5, 4, or 3 BusClocks)
16Bit I/O Recovery Time: 2 BusClocks (5, 4, 3 or 2 BusClocks)

Non-Cacheable Block 1: Disabled (Disabled, DRAM or PCI Bus)
- **Block Size:** Disabled (64 KB, 128 KB, 256 KB, 512 KB, 1 MB, 2 MB, 4 MB or 8 MB)
- **Block Base:** Disabled (change with + or - block)

Non-Cacheable Block 2: Disabled (Disabled, DRAM or PCI Bus)
- **Block Size:** Disabled (64 KB, 128 KB, 256 KB, 512 KB, 1 MB, 2 MB, 4 MB or 8 MB)
- **Block Base:** Disabled (change with + or - block)

19.1.3.4.Power Management Setup

Power Management/APM: Disabled (Enabled or Disabled)

All options below are grayed out and disabled by virtue of the fact that Power Management is Disabled globally.

Instant-on Time Out (minutes): N/A (Disabled or 1 minute to 15 minutes in 1 minute increments)

Auxiliary Power Supply Time-out: N/A (Disabled, Stand by or Suspend)

Meg A Key Video Power Down Mode: N/A (Disabled, Stand by or Suspend)

DPMS Video Power Down Mode: N/A (Disabled, Stand by or Suspend)

Green PC Monitor Power State: N/A (Disabled, Stand by or Suspend)

Hard Disk Power Down Mode: N/A (Disabled, Stand by or Suspend)

Hard Disk Time Out (Minutes): N/A (Disabled or 1 minute to 15 minutes in 1 minute increments)

Stand by Time Out (Minutes): N/A (Disabled or 1 minute to 15 minutes in 1 minute increments)

Suspend Time Out (Minutes): N/A (Disabled or 1 minute to 15 minutes in 1 minute increments)

Slow Clock Ratio: N/A (1:1, 1:2, 1:4, 1:8, 1:16, 1:32, 1:64 or 1:128)

IRQ 3: N/A (Ignore or Monitor)

IRQ 4: N/A (Ignore or Monitor)

IRQ 5: N/A (Ignore or Monitor)

IRQ 7: N/A (Ignore or Monitor)

IRQ 9: N/A (Ignore or Monitor)

IRQ 10: N/A (Ignore or Monitor)

IRQ 11: N/A (Ignore or Monitor)

IRQ 12: N/A (Ignore or Monitor)

IRQ 15: N/A (Ignore or Monitor)

19.1.3.5.PCI/PnP Setup

CPU to PCI Post Write: 3 CPUClocks (Disabled, 4 or 3 CPUClocks)
CPU to PCI Burst Write: Disabled (Disabled or Enabled)
Max Burst Range in PCI Master: 1 KB (256 Bytes, 512 Bytes, 1 KB, 2 KB or 4 KB)
PCI VGA Palette Snoop: Disabled(Disabled or Enabled)
PCI Master Read Advanced Snoop: Enabled (Enabled or Disabled)

PCI Master Write Advanced Snoop: Enabled (Enabled or Disabled)
PCI Slot 1 Latency Timer: 248 (32, 64, 96, 128, 160, 192, 224 or 248)
PCI Slot 2 Latency Timer: 248 (32, 64, 96, 128, 160, 192, 224 or 248)
PCI Slot 3 Latency Timer: 248 (32, 64, 96, 128, 160, 192, 224 or 248)
PCI Slot 4 Latency Timer: 248 (32, 64, 96, 128, 160, 192, 224 or 248)

PCI Slot 1 IRQ Preference: Auto (Auto, IRQ 5 or IRQ 11)
PCI Slot 2 IRQ Preference: Auto (Auto, IRQ 5 or IRQ 11)
PCI Slot 3 IRQ Preference: Auto (Auto, IRQ 5 or IRQ 11)
PCI Slot 4 IRQ Preference: Auto (Auto, IRQ 5 or IRQ 11)
IRQ 3: PnP (grayed out)

IRQ 4: PnP (grayed out)
IRQ 5: PCI/PnP (PCI/PnP or ISA)
IRQ 7: PnP (grayed out)
IRQ 9: ISA (PCI/PnP or ISA)
IRQ 10: ISA (PCI/PnP or ISA)

IRQ 11: PCI/PnP (PCI/PnP or ISA)
IRQ 12: PnP (grayed out)
IRQ 14: PCI (grayed out)
IRQ 15: PCI (grayed out)
DMA Channel 0: PnP (PnP or ISA)

DMA Channel 1: PnP (PnP or ISA)
DMA Channel 3: PnP (PnP or ISA)
DMA Channel 5: PnP (PnP or ISA)
DMA Channel 6: PnP (PnP or ISA)
DMA Channel 7: PnP (PnP or ISA)

Reserved ISA Card Memory Size: Disabled (Disabled, 16K, 32K, or 64 K)
Reserved ISA Card Memory Address: N/A (grayed out)

19.1.3.6.Peripheral Setup

Onboard Floppy Controller: Enabled (Disabled or Enabled)
Onboard Primary/Secondary IDE: Both (Disabled, Primary, Secondary or Both)
OnBoard Primary Prefetch: Master (Disabled, Master, Slave or both)
OnBoard Primary Post Write: Enabled (Disabled or Enabled)
OnBoard Secondary Prefetch: Disabled (Disabled or Slave)

OnBoard Secondary Post Write: Disabled (Disabled or Enabled)
OffBoard PCI/ISA IDE Card: N/A (grayed out)
OffBoard Primary/Secondary: N/A (grayed out)
OffBoard PCI IDE Primary IRQ: N/A (grayed out)
OffBoard PCI IDE Secondary IRQ: N/A (grayed out)

Serial Port 1 IRQ: IRQ 4 (Disabled or IRQ 4)
Serial Port 1 Address: 3F8h (Disabled, 3F8h or 3E8h)
Serial Port 1 FIFO: Disabled (Disabled or Enabled)
Serial Port 2 IRQ: IRQ 3 (Disabled or IRQ 3)
Serial Port 2 Address: 2F8h (Disabled, 2F8h or 2E8h)

Serial Port 2 FIFO: Disabled (Disabled or Enabled)
Parallel Port IRQ: IRQ 7 (Disabled, IRQ 7 or IRQ 5)
Parallel Port Address: 378h (Disabled, 378h or 278h)
Parallel Port Mode: EPP (Normal, EPP or ECP)
Parallel Port DMA Channel: N/A (grayed out)

19.1.3.7.Security Setup

Do Not Use! If a password is configured and not available after the computer is reset the CMOS battery will have to be drained and the system reconfigured.

Supervisor:

Space to enter up to 6 digit password

User:

Not accessible without entering the supervisor's password.

19.1.3.8.Utility Setup

Language: English

Detect IDE: Not used (System performs auto detection during power up)

19.1.3.9.Default Setup

Original: Question: Restore old values? No/Yes (don't use)

Optimal: Question: Load optimal values? No/Yes (This resets the BIOS to the settings listed in this section, except 19.1.3.1 Standard Setup)

Fail-safe Question: Load fail-safe values? No/Yes (don't use)

19.1.4. AMI 727072997 Coulter GEN•S BIOS Configuration

All of settings are the same as those in version 727032797 (section 19.1.3) except the below settings was changed to ISA from PCI/PnP. This change was made because a new version of the Creative Labs board sound card was released. This new setting and BIOS is backward compatible with the previous sound cards.

PCI/PnP Setup

IRQ 5: ISA (PCI/PnP or ISA)

19.1.5. AMI S3030127A Coulter GEN•S BIOS Configuration

All of settings are the same as those in version 727072997. The BIOS has internal modifications required by the Atlas PCI-III motherboard.

20. GEN•S WORKSTATION APPLICATION

The GEN•S Workstation Application is the software program that is used during the operation of the instrument. The Workstation Application and the operating system are loaded using the imaging utility. The Workstation Application can also be upgraded using the upgrade procedures in this section.

20.1. GEN•S Workstation Application Version 1A (1.963412)

The file README.WRI located on the GEN•S Workstation Installation and System Help CD-ROM in the ADMS directory contains information required to load this version of GEN•S Workstation software. This file can be opened using the Write program located in the Accessories group. The entire document MUST be read before loading the GEN•S Workstation Installation.

20.1.1. GEN•S Workstation Application Installation Procedure

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- 1 blank 3 1/2 High Density Disk labeled Emergency Repair Disk, *Computer Name*, and *today's date*

Note: Logon using the Service Administrator Account for Steps A through D.

Step A - Software installation Preparation

Note: Start at Step 22 if the GEN•S Workstation Application has not been loaded and Windows NT was loaded using the procedure in Section 22 of this document.

1. Press <CTRL> + <ESC> to access the Windows NT Task List.
2. Select PROGRAM MANAGER, then choose SWITCH TO.
3. Select the STARTUP (COMMON) group, then choose DELETE from the FILE pull-down menu in PROGRAM MANAGER.
4. Choose YES at the DELETE prompt.
5. Choose DISK ADMINISTRATOR from the ADMINISTRATOR TOOLS group.
6. If a prompt that this is the first time DISK ADMINISTRATOR has been run choose OK. (This prompt will open behind program manager. Hold the ALT key down and use the TAB key to move to the prompt.)
7. If a CONFIRM prompt appears, choose YES. (This only appears the first time DISK ADMINISTRATOR is run with a hard drive.)
8. Choose CD-ROM DRIVE LETTERS from the TOOLS pull down menu.
9. Select H for the DRIVE LETTER.
10. Choose Change.
11. Choose YES to CONFIRM.
12. Close DISK ADMINISTRATOR.

13. Verify that the computer name is GENS with the Computer 5 digits serial number added without any spaces, (i.e., if the computer serial number is 12345, then the name would be GENS12345). The computer name is displayed in the title bar of PROGRAM MANAGER in the following format PROGRAM MANAGER - COMPUTER NAME\LOGGED ON USER. If the name displayed is correct, then choose CONTROL PANEL from the MAIN group and continue at step 22.

14. Choose CONTROL PANEL from the MAIN group.

15. Choose NETWORK from CONTROL PANEL.

16. Choose CHANGE located beside COMPUTER NAME field.

17. Enter “GENS” with the Computer serial number added on in the Computer Name Field, then choose CONTINUE. **DO NOT ENTER ANY SPACES IN THE NAME AND USE THE COMPLETE COMPUTER SERIAL NUMBER** (i.e., if the computer serial number is 12345, then the name would be GENS12345).

18. Choose YES at NETWORK SETTINGS confirmation that you want to change the computer name.

19. Choose OK at NETWORK SETTINGS confirmation that name was changed.

20. Choose OK at NETWORK SETTINGS screen.

21. Choose DON’T RESTART NOW.

22. Choose SYSTEM from CONTROL PANEL.

23. Choose VIRTUAL MEMORY from SYSTEM.

24. Enter “150” MB for MAXIMUM SIZE (MB): then choose SET.

25. Choose OK at VIRTUAL MEMORY.

26. Choose OK at SYSTEM.

27. Choose RESTART NOW.

- Continue at Step B if the current GEN•S Workstation version installed is release 1.962681, (Beta B), or earlier.
- Continue at Step C if the current GEN•S Workstation version installed is 1.962691 or later (1A).
- Continue at step D if Windows NT has been loaded using the procedure in section 22 of this document and the GEN•S Workstation Application has not been loaded.

Step B - Software installation Preparation for release 1.962618 or earlier

1. Choose FILE MANAGER from the MAIN group.

2. Choose DELETE from the file pull-down menu.

3. Enter “C:\ADMS C:\HOSTSPOOLER“ for DELETE then choose OK.

4. Choose YES TO ALL for all CONFIRM FILE DELETE prompts and IGNORE if any ERROR DELETING FILE prompts appear.

5. Choose DELETE from the file pull-down menu.

6. Enter “C:\TEMP*.*” for DELETE then choose OK.

7. Choose YES TO ALL for all CONFIRM FILE DELETE prompts and IGNORE if any ERROR DELETING FILE prompts appear.

8. Choose SORT BY TYPE from the VIEW pull-down menu.

9. Select each file with a one digit numeric extension (i.e., “CTL3D32.0”) then press delete until all these files are deleted.

10. Choose SORT BY NAME from the VIEW pull-down menu.

11. Select each file named TEMP with a three digit numeric extension (i.e.,”TEMP.000”), then press delete until all these files are deleted.

12. Continue at Step D.

Step C - Software installation Preparation for release 1.962691 or later

1. Choose CONTROL PANEL from the MAIN group.

2. Choose SYSTEM from CONTROL PANEL.

3. Choose VIRTUAL MEMORY from SYSTEM.

4. Verify the MAXIMUM SIZE (MB): is 150. If not enter “150” then choose SET.

5. Choose OK at VIRTUAL memory.

6. Choose OK at SYSTEM.

7. Choose DON’T RESTART NOW if this prompt appears.

8. Choose SQL SETUP from the MICROSOFT SQL SERVER 6.5 (COMMON) group.

9. Choose CONTINUE at the WELCOME screen.

10. Choose CONTINUE at the SQL SERVER ALREADY INSTALLED screen.

11. Select REMOVE SQL SERVER then choose CONTINUE at the MICROSOFT SQL SERVER 6.5 - OPTIONS screen.

12. Select REMOVE FILES FROM: C:\MSSQL at the REMOVE SQL SERVER screen then choose RESUME.

13. Choose EXIT TO WINDOWS NT at the Microsoft SQL Server 6.5 screen.

14. Choose FILE MANAGER from the MAIN group.

15. Choose DELETE from the file pull-down menu.

16. Enter “C:\MSSQL C:\ADMS\DB” for DELETE then choose OK.

17. Choose YES TO ALL for all CONFIRM FILE DELETE prompts.

18. Choose DELETE from the file pull-down menu.
19. Enter “C:\TEMP\DUMP.DAT” for DELETE then choose OK.
20. Choose YES at CONFIRM FILE DELETE prompt.
21. SHUTDOWN and RESTART Windows NT.
22. Continue at Step D.

Step D - Administrator Account Setup

1. Choose USER MANAGER from ADMINISTRATIVE TOOLS.
2. Choose ACCOUNT from Policies pull down menu.
3. Select PASSWORD NEVER EXPIRES, then choose OK.
4. Select username GUEST, then choose PROPERTIES from the USER pull-down menu.
5. Select ACCOUNT DISABLED, then Choose OK.
6. Select ADMINISTRATOR, then choose RENAME from the USER pull-down menu.
7. Enter the on-site SERVICE ADMINISTRATOR user name for CHANGE TO, then choose OK.
8. With the user name created in the previous step, choose PROPERTIES from the USER pull-down menu.
9. Enter the on-site SERVICE ADMINISTRATOR password at PASSWORD and CONFIRM PASSWORD then choose OK.
10. Select username GENS, then choose DELETE from the User pull down menu if this user is listed. If there is not a GENS user continue at step 13.
11. Choose OK at the USER MANAGER prompt.
12. Choose YES at the second USER MANAGER prompt.
13. Close USER MANAGER.

Step E - Software Loading or Upgrade

1. Insert the GEN•S WORKSTATION INSTALLATION AND SYSTEM HELP CD-ROM in the CD-ROM drive.
2. Run “H:\ADMS\SETUP.EXE”.
3. At the WELCOME prompt choose NEXT.
4. At the SELECT COMPONENT screen select the type of installation then choose NEXT. (The GEN•S Workstation has the computer part number on the rear of the computer base.)

5. If a prompt to CONFIRM NEWLY SELECTED DIRECTORY appears choose YES. (It will take from 5 to 10 minutes to install the GEN•S Workstation program and help files.)

6. At the WELCOME dialog, choose CONTINUE.

7. At the SQL Server A PASSWORD prompt choose CONTINUE.(It will take from 5 to 10 minutes to install the SQL Server Service Pack 1.)

8. At the SQL Server MICROSOFT SQL SERVER SERVICE PACK COMPLETED prompt choose EXIT TO WINDOWS NT. (It will take from 5 to 20 minutes to create the GEN•S Workstation Data Base.)

9. At the ODBC SQL SERVER SETUP prompt choose OK.

10. If a prompt ADMSSQLDB IS ALREADY A DATA SOURCE CHOOSE YES TO OVERWRITE appears choose YES.

11. At the DO YOU WANT TO VIEW THE README FILE NOW prompt choose NO.

12. At the RESTART YOUR GEN·S WORKSTATION prompt choose OK to accept the default selection YES I WANT TO RESTART MY COMPUTER NOW.

Step F - GEN•S Workstation Configuration

1. Logon log on with the user name “LabAdmin”. The password is blank by default.)The GEN•S Workstation will start automatically.)

2. Wait until the GEN•S Workstation Application loads completely before going to the next step.

3. From PROGRAM MANAGER select MINIMIZE ON USE from the OPTIONS pull-down menu then select SAVE SETTINGS NOW from the OPTIONS pull-down menu. (When these options are selected they will have a check mark beside them. If they already have a check mark beside them don’t select them as this will un-select the option.)

4. After LOGOFF or SHUTDOWN and RESTART PROGRAM MANAGER remains on top. Choose an icon on the COMMAND CENTER at the bottom of the screen, to minimize it.

5. From the GEN•S Workstation application choose SYSTEM SETUP then SECURITY ACCESS and create GEN•S Workstation operator accounts of level 1, 2 and 3.

Step G - GEN•S Workstation Verification

1. Complete the GEN•S Workstation Functional Verification.

20.1.2. Installation of the GEN•S Workstation Application Using the Imaging Utility

Note: All data on the hard drive will be completely erased when this procedure is completed!

Required Resources:

- Imaging Boot Utility Disk (P/N 6417654)
- CD-ROM containing the Image with the correct configuration for the Workstation that will be imaged

Note: There are different Vendor revisions for the computer base even though the Coulter part number is the same. The correct CD-ROM for the Vendor revision must be used. Use the table in Section 30.4 to determine the correct CD-ROM to use.

1. Insert the Imaging Utility Boot Disk into the A:\ drive and the correct Image CD into the CD-ROM drive.
2. Power off the GEN•S Workstation.
3. Power on the computer.
4. Press <ENTER> when the system displays PRESS ANY KEY TO CONTINUE (The displayed configuration is for the CD-ROM image in the CD-ROM drive)
5. When A:\> is displayed, type “IMAGE”, then press <ENTER>.
6. The imaging process will take approximately 45 minutes. **Do not open the CD-ROM drive, move or jar the computer during this process.**
7. When the imaging process is complete, and A:\> is displayed, remove the diskette and the CD from the computer then reboot the computer.
8. Logon using an Administrator account.
9. Wait until the Workstation has completely loaded before going to next step.
10. From Program Manager choose CONTROL PANEL from the MAIN group.
11. Choose NETWORK from CONTROL PANEL.
12. Select CHANGE located beside the COMPUTER NAME.
13. Enter GENS with the Computer serial number added on in the Computer Name Field, then choose CONTINUE. **DO NOT ENTER ANY SPACES IN THE NAME AND USE THE COMPLETE COMPUTER SERIAL NUMBER** (i.e., if the computer serial number is 12345, then the name would be GENS12345.)
14. Select OK again at the message that the computer name has been changed
15. Choose DON’T RESTART NOW.
16. Choose SYSTEM SETUP from the WORKSTATION COMMAND CENTER, then choose COMMUNICATIONS.
17. Enter the serial numbers and revisions for the Analyzer, Diluter and Power Supply.
18. Select GEN•S Workstation and enter the serial numbers for the monitor and computer.
19. Shutdown and restart the Workstation.

GEN•S Workstation Application Version 1B (1.970151)

20.1.3. GEN•S Workstation Application Installation Procedure

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- 1 blank 3 1/2 High Density Disk labeled Emergency Repair Disk, *Computer Name*, and *today's date*

Note: Logon using the Service Administrator Account for Steps A through D.

Step A - Software installation Preparation

Note: Before starting this procedure Windows NT or Windows NT and the GEN•S Workstation Application Version 1A or 1B must have been loaded using procedures in this document.

1. Press <CTRL> + <ESC> to access the Windows NT Task List.

2. Select PROGRAM MANAGER, then choose SWITCH TO.

3. If there is a STARTUP (COMMON) group complete the following steps. If not continue at step 4.

    - minimize it if it is not already minimized
    - select the STARTUP (COMMON) icon with a single mouse click
    - press <ESCAPE>
    - choose DELETE from the FILE pull-down menu in PROGRAM MANAGER
    - choose YES at the DELETE prompt.

4. Verify that the computer name is GENS with the Computer 5 digits serial number added without any spaces, (i.e., if the computer serial number is 12345, then the name would be GENS12345). The computer name is displayed in the title bar of PROGRAM MANAGER in the following format PROGRAM MANAGER - COMPUTER NAME\LOGGED ON USER. If the name displayed is correct, then choose CONTROL PANEL from the MAIN group and continue at step 5.

    - Choose CONTROL PANEL from the MAIN group.
    - Choose NETWORK from CONTROL PANEL.
    - Choose CHANGE located beside COMPUTER NAME field.
    - Enter "GENS" with the Computer serial number added on in the Computer Name Field, then choose CONTINUE. **DO NOT ENTER ANY SPACES IN THE NAME AND USE THE COMPLETE COMPUTER SERIAL NUMBER** (i.e., if the computer serial number is 12345, then the name would be GENS12345).
    - Choose YES at NETWORK SETTINGS confirmation that you want to change the computer name.
    - Choose OK at NETWORK SETTINGS confirmation that name was changed.
    - Choose OK at NETWORK SETTINGS screen.

- Choose DON'T RESTART NOW.

5. Choose SYSTEM from CONTROL PANEL.
6. Choose VIRTUAL MEMORY from SYSTEM.
7. Enter "150" MB for MAXIMUM SIZE (MB): then choose SET.
8. Choose OK at VIRTUAL MEMORY.
9. Choose OK at SYSTEM.
10. Choose RESTART NOW.

Step B - Software Loading

1. Insert the GEN•S WORKSTATION INSTALLATION AND SYSTEM HELP CD-ROM in the CD-ROM drive.
2. Run "H:\ADMS\SETUP.EXE".
3. At the WELCOME prompt choose NEXT.
4. At the SELECT COMPONENT screen select the type of installation then choose NEXT. (The GEN•S Workstation has the computer part number on the rear of the computer base.)
5. If a prompt to CONFIRM NEWLY SELECTED DIRECTORY appears choose YES. (It will take from 5 to 10 minutes to install the GEN•S Workstation program and help files.)
6. At the ODBC SQL SERVER SETUP prompt choose OK.
7. If a prompt ADMSSQLDB IS ALREADY A DATA SOURCE CHOOSE YES TO OVERWRITE appears choose YES.
8. At the DO YOU WANT TO VIEW THE README FILE NOW prompt choose NO.
9. At the RESTART YOUR GEN·S WORKSTATION prompt choose OK to accept the default selection YES I WANT TO RESTART MY COMPUTER NOW.

Step C - GEN•S Workstation Configuration

1. Logon log on with the user name "LabAdmin". The password is blank by default.)The GEN•S Workstation will start automatically.)
2. Wait until the GEN•S Workstation Application taskbar is loaded before going to the next step.
3. From PROGRAM MANAGER select MINIMIZE ON USE from the OPTIONS pull-down menu then select SAVE SETTINGS NOW from the OPTIONS pull-down menu. (When these options are selected they will have a check mark beside them. If they already have a check mark beside them don't select them as this will un-select the option.)

Step D - GEN•S Workstation Verification

1. Complete the GEN•S Workstation Functional Verification.

20.1.4. GEN•S Workstation Backup Configuration Disk Creation

Required Resources:

- 1 blank 3 1/2 High Density Disk labeled GEN•S Workstation Backup Configuration, *Computer Name*, and *today's date*

1. Choose SYSTEM SETUP from the taskbar.
2. Choose the SAVE CONFIGURATION icon, (this icon has an arrow pointing from a hard drive to a floppy disk).
3. Enter A:\GENSWS.REG for the FILE NAME then choose OK.

20.1.5. GEN•S Workstation Application Repair Procedure Using the Backup Configuration Disk

Required Resources:

- The GEN•S Workstation Backup Configuration disk with the current configuration. (This procedure will restore all ranges to the values when the disk was created. ENSURE REQUIRED DATA is backed up.)

1. Choose SYSTEM SETUP from the taskbar.
2. Choose the RESTORE CONFIGURATION icon, (this icon has an arrow pointing from a floppy disk to a hard drive).
3. Enter A:\GENSWS.REG for the FILE NAME then choose OK.
4. Choose OK at SETUP prompt then SHUTDOWN and RESTART Workstation.

20.1.6. Installation of the GEN•S Workstation Application Using the Imaging Utility

Note: All data on the hard drive will be completely erased when this procedure is completed!

Required Resources:

- Imaging Boot Utility Disk
- CD-ROM containing the Image with the correct configuration for the Workstation that will be imaged

Note: There are different Vendor revisions for the computer base even though the Coulter part number is the same. The correct CD-ROM for the Vendor revision must be used. Use the table in Section 30.4 to determine the correct CD-ROM to use.

1. Insert the Imaging Utility Boot Disk into the A:\ drive and the correct Image CD into the CD-ROM drive.

2. Power off the GEN•S Workstation.

3. Power on the computer.

4. Press <ENTER> when the system displays PRESS ANY KEY TO CONTINUE (The displayed configuration is for the CD-ROM image in the CD-ROM drive)

5. Enter “IMAGE” then press <ENTER> at the prompt.

6. When the imaging process is complete, and A:\> is displayed, remove the diskette and the CD from the computer then reboot the computer.

7. Logon using an Administrator account.

8. Wait until the Workstation has completely loaded before going to next step.

9. From Program Manager choose CONTROL PANEL from the MAIN group.

10. Choose NETWORK from CONTROL PANEL.

11. Select CHANGE located beside the COMPUTER NAME.

12. Enter GENS with the Computer serial number added on in the Computer Name Field, then choose CONTINUE. **DO NOT ENTER ANY SPACES IN THE NAME AND USE THE COMPLETE COMPUTER SERIAL NUMBER** (i.e., if the computer serial number is 12345, then the name would be GENS12345.)

13. Select OK again at the message that the computer name has been changed

14. Choose DON’T RESTART NOW.

15. Choose SYSTEM SETUP from the WORKSTATION COMMAND CENTER, then choose COMMUNICATIONS.

16. Enter the serial numbers and revisions for the Analyzer, Diluter and Power Supply.

17. Select GEN•S Workstation and enter the serial numbers for the monitor and computer.

18. Shutdown and restart the Workstation.

20.2. GEN•S Workstation Application Version 1C

20.2.1. Upgrading the GEN•S Workstation to 1C from 1B

1. Logon using the username “SER” then insert the “GEN•S WORKSTATION INSTALLATION AND SYSTEM HELP” CD version 1C in the CD-ROM drive.

2. Print out the following information as it will be reinitialized to the default setting during the upgrade:
   - System Setup-> Quality Assurance->Reagents: (Lot#, Expiration Dates, …)

3. Select the START GEN•S WORKSTATION icon located in the Startup (Common) group then press the <DELETE> key and choose YES to confirm at the DELETE prompt.

4. Select SAVE SETTINGS NOW from the OPTIONS pull-down menu in PROGRAM MANAGER.

5. Choose CONTROL PANEL from the MAIN MENU in PROGRAM MANAGER then choose SERVICES.

6. Use the down arrow key to highlight RCS SERVICE , choose STARTUP, select MANUAL for STARTUP TYPE, choose OK, then choose CLOSE.

7. Shutdown and restart the Workstation then logon using the username “SER”.

8. Load the virus scan utility (section 22.1.8).

9. From the FILE pull-down menu in PROGRAM manager run “H:\ADMS\SETUP.EXE”.

10. At the WELCOME prompt choose NEXT.

11. At the SELECT COMPONENT screen chose NEXT to accept Computer PN 2016744 as the type of installation as shown in figure 20-1.

Select Components
Select the computer you are installing Gen S WorkStation on, then press the Next button to proceed.
< Back
Next >
Cancel

Figure 20-1- Select Component

12. Choose OK at the ODBC SQL SERVER SETUP prompt as shown in figure 20-2.

Figure 20-2 **-** ODBC SQL Server Setup

13. At the prompt ADMSSQLDB …IS ALREADY A DATA SOURCE choose YES TO OVERWRITE

NOTE:
Before choosing OK at step 22 the MICROSOFT ACCESS DRIVER must be selected .

14. Select MICROSOFT ACCESS DRIVER (*.mdb) then choose OK at the INSTALL DRIVERS prompt as shown in figure 20-3.

Figure 20-3 **-** Install Drivers

15. Choose OK at the ODBC MICROSOFT ACCESS 7.0 SETUP prompt as shown in figure 20-4.

Figure 20-4- Install Drivers

16. At the DO YOU WANT TO VIEW THE README FILE NOW prompt choose NO.

17. At the RESTART YOUR GEN·S WORKSTATION prompt choose OK to accept the default selection YES I WANT TO RESTART MY COMPUTER NOW.

18. Perform the System Verification Procedure from the GEN•S Service Manual, Heading 5.1.

19. Log off the Workstation then log on using username “LABADMIN” without entering a password,

20. Review the information in the README.WRI file with the customer, showing the changes in this software revision. Do the following to view the file on the Workstation. See Attachment 1 for a copy of this file. To access the README.WRI file online:
    - Select the Help icon from any GEN•S application window.
    - Select the Readme button on the Help toolbar.

21. Customer setup information can now be entered. The upgrade from 1B reset the information below to the new default settings.
    - System Setup-> Quality Assurance->Reagents
    - System Setup->Patient->Reporting Options: the report profile definitions are reinitialized for reporting profiles 8, 9 and 10.

20.2.2. Installation of the GEN•S Workstation Application version 1C Using the Imaging Utility

NOTE: All data on the hard drive will be completely erased when this procedure is completed! Verify all necessary patient, control and setup information has been printed or saved as needed.

Required Resources:

- Imaging Boot Utility Disk
- CD-ROM containing the Image with the correct configuration for the Workstation that will be imaged

NOTE: There are different Vendor revisions for the computer base even though the Coulter part number is the same. The correct CD-ROM for the Vendor revision must be used. Use the table in Section 30.4 to determine the correct CD-ROM to use.

1. Verify all necessary patient, control and setup information has been printed or saved as needed.

2. If the Workstation is connected to a host computer, choose SYSTEM SETUP, COMMUNICATIONS then the LIS/HIS tab and write down or print out the setup protocol.

3. Insert the Imaging Boot Disk into the A:\ drive and the Image CD into the CD-ROM drive.

4. Power off the Workstation.

5. Power on the Workstation then press <ENTER> when the system displays '***Strike any key when ready'***.

6. When the A:\> is displayed, type "**IMAGE".**

7. Press <ENTER> to begin the disk imaging process. The imaging process will take approximately 45 minutes.

8. When the imaging process is complete, the scrollbar displays ***100% completion*** and **A:\>** is displayed. Remove the diskette and the CD from the computer then shutdown and restart the Workstation.

9. Logon using the username "SER".

10. Choose CONTROL PANEL from the MAIN menu in PROGRAM MANAGER, then choose NETWORK.

11. Choose CHANGE located beside the COMPUTER NAME as shown in figure 20-5**.**

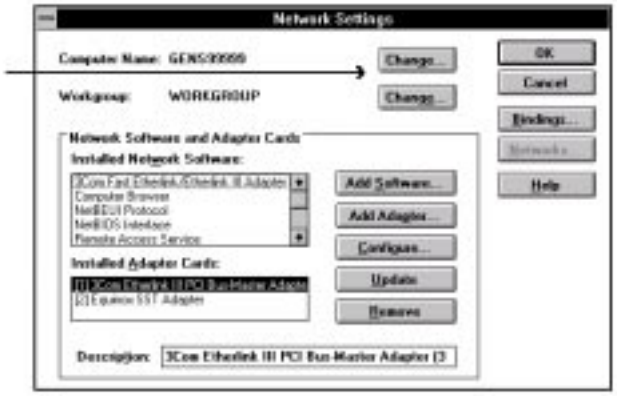


Figure 20-5- Control Panel, Network Settings

12. As shown in Figure 20-6, to enter the computer name in the format **GENSxxxxx**, where xxxxx is the serial number of the computer base then choose OK. **DO NOT ENTER ANY SPACES OR ADDITIONAL CHARACTERS.**

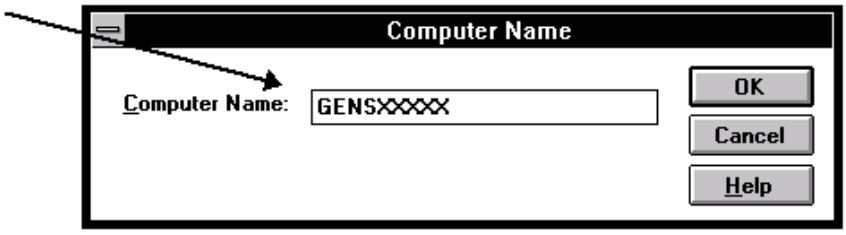


Figure 20-6**-** Entering The Computer Name

13. Choose OK again at the Network Settings message. See Figure 20-7.

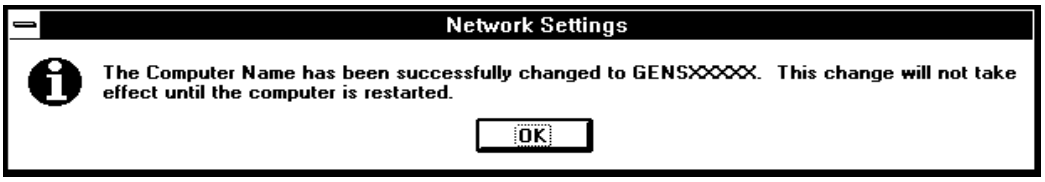

Network Settings
The Computer Name has been successfully changed to GENSXXXXX. This change will not take effect until the computer is restarted.
OK

Figure 20-7- Network Settings Message

14. Choose OK at the Network Settings window then choose RESTART NOW.

15. Logon using the username “SER”.

16. Choose SYSTEM SETUP from the COMMAND CENTER, then choose COMMUNICATIONS.

17. Enter the component serial numbers and revision levels at the INSTUMENT and GENS WORKSTATION tabs. See Figure 20-8.

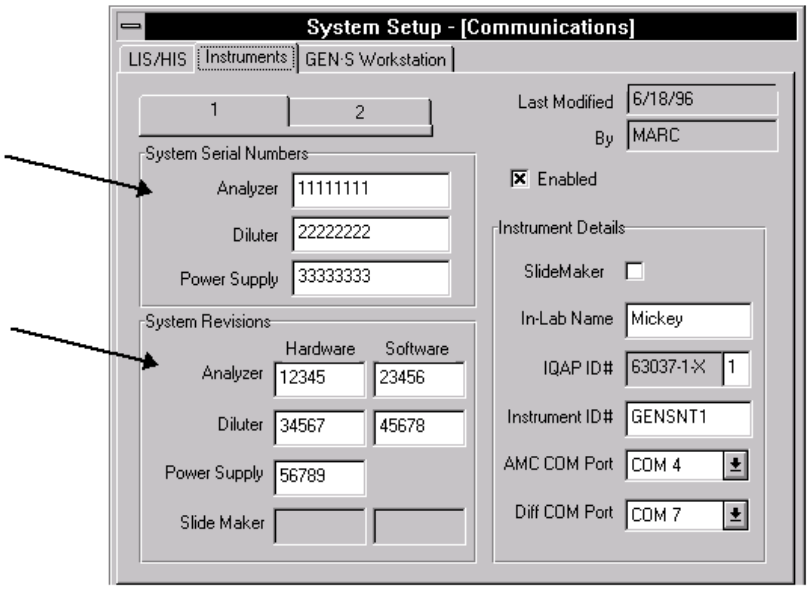


Figure 20-8- Communications, System Setup Window

18. If the system is connected to a host computer select the LIS/HIS tab then enter the host communication protocol.

19. Install print drivers if required.

20. Perform the System Verification Procedure from the GEN•S Service Manual, Heading 5.1.

21. Log off the Workstation then log on using username “LABADMIN” without entering a password,

22. Review the information in the README.WRI file with the customer, showing the changes in this software revision. Do the following to view the file on the Workstation. See Attachment 1 for a copy of this file. To access the README.WRI file online:
    - Select the Help icon from any GEN•S application window.

- Select the Readme button on the Help toolbar.

23. Customer setup information can now be entered.

20.3. GEN•S Workstation Application Version 1D

20.3.1. Upgrading the GEN•S Workstation to 1D from 1C

1. Record the DATABASE PREFERENCES and REPORTING OPTIONS settings from SYSTEM SETUP because they will be reinitialized to the default settings during the software upgrade. The XB data displayed in the QA menu is not saved during the software upgrade.

2. Logon using the username “SER” then insert the “GEN•S WORKSTATION INSTALLATION AND SYSTEM HELP” CD version 1D in the CD-ROM drive.

3. Select the START GEN•S WORKSTATION icon located in the Startup (Common) group then press the <DELETE> key and choose YES to confirm at the DELETE prompt.

4. Select SAVE SETTINGS NOW from the OPTIONS pull-down menu in PROGRAM MANAGER.

5. Shutdown and restart the Workstation then logon using the username “SER”.

6. From the FILE pull-down menu in PROGRAM manager run “H:\ADMS\SETUP.EXE” .

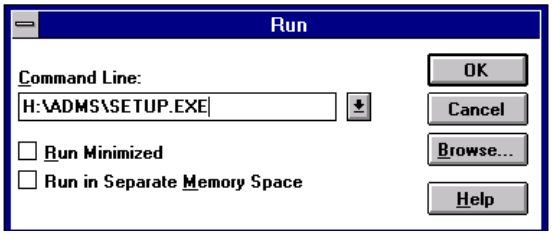


Figure 20-9- Run

7. At the WELCOME screen choose NEXT.

8. At the SELECT COMPONENT screen shown in Figure 20-10 chose NEXT to accept Computer PN 2016744 as the type of installation.

Figure 20-10- Select Component

9. Choose OK at the ODBC SQL SERVER SETUP prompt that will appear approximately 5 minutes after step 7 as shown in figure 20-11.

Figure 20-11-ODBC SQL Server Setup

10. At the prompt ODBC SQL SERVER SETUP choose YES TO OVERWRITE as shown in Figure 20-12.

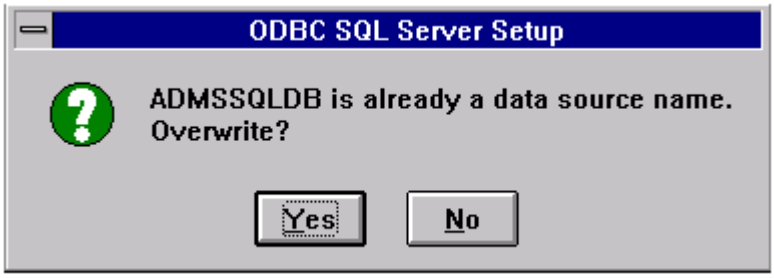


Figure 20-12- ODBC SQL Server Setup

11. At the SELECT ALGORITHM select OK as shown in Figure 20-13.

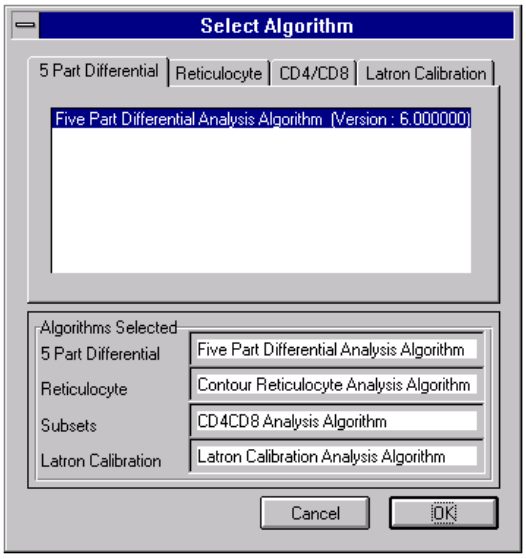


Figure 20-13- Select Algorithm

12. At the DO YOU WANT TO VIEW THE README FILE NOW prompt choose NO.

13. At the RESTART YOUR GEN·S WORKSTATION prompt choose OK to accept the default selection YES I WANT TO RESTART MY COMPUTER NOW.

14. Logon using the username “SER”.

15. From the FILE pull-down menu in PROGRAM manager run “C:\ADMS\RCSSERVICE -I” ,(there is a space between RCSSERVICE and -I). The character after the “-“ is the

letter i.

16. Perform the System Verification Procedure from the GEN•S Service Manual, Heading 5.1.

17. Log off the Workstation then log on using username “LABADMIN”.

18. Review the information in the README.WRI file with the customer, showing the changes in this software revision including the settings for the DATABASE PREFERENCES and REPORTING OPTIONS. See Attachment 1 for a copy of this file. To access the README.WRI file online:
    - Choose the HELP icon from any GEN•S application window.
    - Choose the README button on the Help toolbar.

19. Customer setup information can now be entered.

20.3.2. Installation of the GEN•S Workstation Application 1D Using the Imaging Utility

Note: All data on the hard drive will be completely erased when this procedure is completed! Verify all necessary patient, control and setup information has been printed or saved as needed.

Required Resources:

- Imaging Boot Utility Disk
- CD-ROM containing the Version 1D Image with the correct configuration for the Workstation that will be imaged

Note: There are different Vendor revisions for the computer base even though the Coulter part number is the same. The correct CD-ROM for the Vendor revision must be used. Use the table in Section 30.4 to determine the correct CD-ROM to use.

1. Complete the “Installation of the GEN•S Workstation Application version 1C Using the Imaging Utility” ,(section 20.3.2), with the correct 1D image CD.

20.4. GEN•S Workstation Application Version 2A

20.4.1. Upgrading the GEN•S Workstation to 2A from 1D

1. Complete procedure 22.1-7 to upgrade Windows NT 3.51 to Windows NT 4.0

2. Logon using the username “SER” then insert the “GEN•S WORKSTATION INSTALLATION AND SYSTEM HELP” CD version 2A in the CD-ROM drive.

3. Un-check SHOW THIS WELCOME SCREEN NEXT TIME YOU START WINDOWS NT then choose CLOSE at prompt.

4. Choose YES at NEW HARDWARE found and YES then YES to restart.

5. From the START menu run “H:\ADMS\SETUP.EXE” .

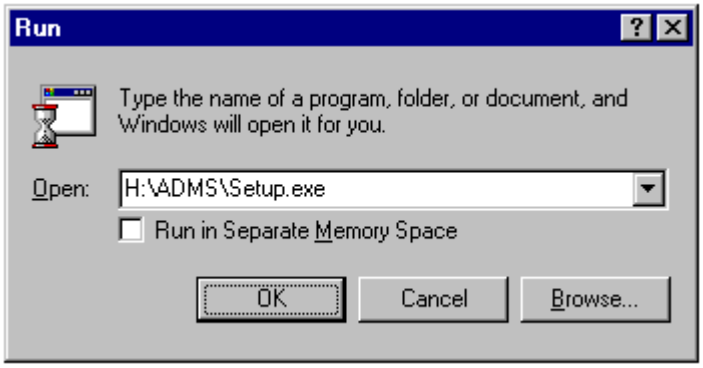


Figure 20-14- Run

6. At the WELCOME screen choose NEXT.

7. At the SELECT COMPONENT screen shown in Figure 20-10 chose NEXT to accept Computer PN 2016744 as the type of installation.

Figure 20-15- Select Component

8. At the RESTART YOUR GEN·S WORKSTATION prompt choose OK to accept the default selection YES I WANT TO RESTART MY COMPUTER NOW.

9. Logon using the username “SER”.

10. Perform the System Verification Procedure from the GEN•S Service Manual, Heading 5.1.

11. Log off the Workstation then log on using username “LABADMIN”.

12. Review the information in the README.WRI file with the customer, showing the changes in this software revision. To access the README.WRI file online:
    - Choose the HELP icon from any GEN•S application window.
    - Choose the README button on the Help toolbar.

13. Customer setup information can now be entered.

20.4.2. Installation of the GEN•S Workstation Application 2A Using the Imaging Utility

Note: All data on the hard drive will be completely erased when this procedure is completed! Verify all necessary patient, control and setup information has been printed or saved as needed.

Required Resources:

- Imaging Boot Utility Disk
- CD-ROM containing the Version 2A Image with the correct configuration for the Workstation that will be imaged

Note: There are different Vendor revisions for the computer base even though the Coulter part number is the same. The correct CD-ROM for the Vendor revision must be used. Use the table in Section 30.4 to determine the correct CD-ROM to use.

1. Complete the “Installation of the GEN•S Workstation Application version 1C Using the Imaging Utility” ,(section 20.3.2), with the correct 2A image CD.

20.5. GEN•S Workstation Application Version 2A1 and higher

All procedures will be documented by service memo for software version 2A1 and higher.

21. OPERATING SYSTEMS FUNCTIONAL OVERVIEW

21.1. Microsoft® Windows NT™ Workstation 3.51 (NT Workstation)

21.1.1. Summary

NT Workstation 3.51 is the operating system (OS) for the GEN•S Workstation. The OS provides a software layer that transfers data and controls the hardware for the GEN•S Workstation Installation. This OS is a 32 bit operating system that is optimized to run on 32 bit processors such as the Intel® Pentium™ . The graphic user interface (GUI) is very similar to prior versions of windows allowing operators familiar with any windows program to easily begin using the operating system.

NT Workstation 3.51 is designed with extensive networking and security functions. These are utilized by the GEN•S Workstation Installation to provide a very secure instrument with networking capabilities.

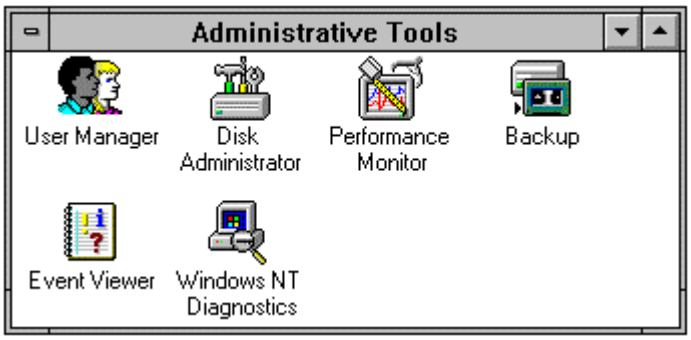
21.1.2. Service Functions

These functions that are built into NT Workstation 3.51 are only available to administrators and service users.

These functions are intended only to be used for troubleshooting and not for system customization.

21.1.3. Administrative Tools

Figure 21-1: Administrative Tools



21.1.3.1.Event Viewer

This function lists events and errors that are logged by Windows NT. The events that are logged include some normal hardware configuration on power-up that do not require any service action. The event log is initialized on each power up of the system and at this time the system records an event in the log with the source as Event Log and a description of “The event log service was started”. The DESCRIPTION for an event can be viewed by double clicking on the event.

21.1.3.2.Windows NT Diagnostics

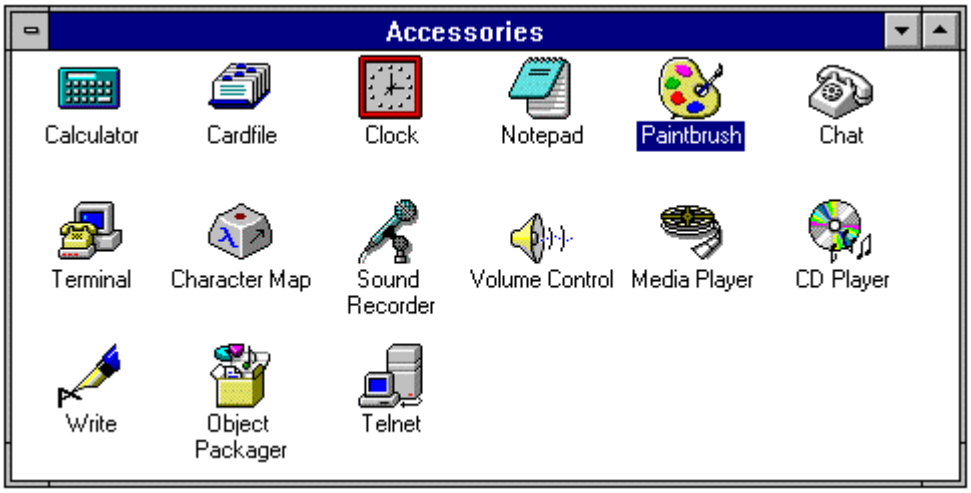
This function a shows extensive information about the hardware and software configuration of the instrument. This function is only for viewing information. Changes to configuration can not be made in these screens.

21.1.4. Control Panel

This group of functions allows for extensive configuration changes

21.1.5. Accessories

Figure 21-2: Accessories



21.1.5.1.Paintbrush

This function allows editing of bitmap files. This can be very useful during troubleshooting to create a file or printout that contains a copy of a screen. The file is created by pressing the <Print Scrn> key at the screen to be copied then opening Paintbrush and choosing PASTE from the EDIT menu. The file can then be printed or saved either on the hard drive for remote retrieval or a floppy disk. Save the file as a 16 color bitmap to fit on a floppy disk.

21.2. Microsoft® Windows NT™ Workstation 4.0 (NT Workstation)

21.2.1. Summary

NT Workstation 4.0 is the operating system (OS) for the GEN•S Workstation. The OS provides a software layer that transfers data and controls the hardware for the GEN•S Workstation Installation. This OS is a 32 bit operating system that is optimized to run on 32 bit processors such as the Intel® Pentium™ . The graphic user interface (GUI) is similar to Windows 95 and uses START button to access all menus and applications. Choose the start button then continue selecting the path until the application are menu is visible then choose click on it to open you selection.

NT Workstation 4.0 is designed with extensive networking and security functions. These are utilized by the GEN•S Workstation Installation to provide a very secure instrument with networking capabilities.

21.2.2. Service Functions

These functions that are built into NT Workstation 4.0 are only available to administrators and service users.

These functions are intended only to be used for troubleshooting and not for system customization.

21.2.3. Administrative Tools

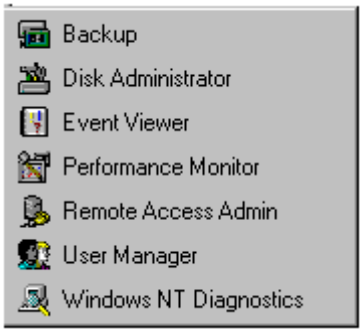


Figure 21-1: Administrative Tools

21.2.3.1.Event Viewer

This function lists events and errors that are logged by Windows NT. The events that are logged include some normal hardware configuration on power-up that do not require any service action. The event log is initialized on each power up of the system and at this time the system records an event in the log with the source as Event Log and a description of “The event log service was started”. The DESCRIPTION for an event can be viewed by double clicking on the event.

21.2.3.2.Windows NT Diagnostics

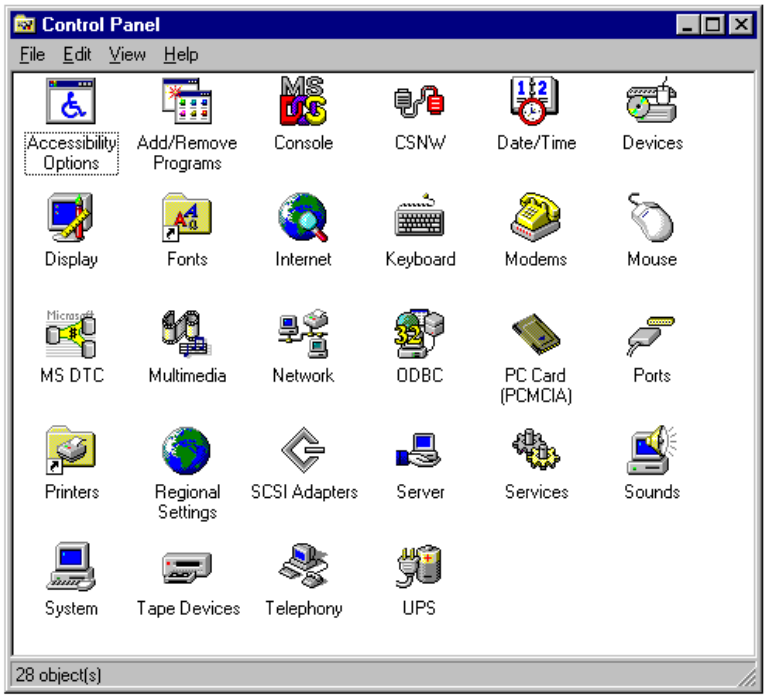
This function a shows extensive information about the hardware and software configuration of the instrument. This function is only for viewing information. Changes to configuration can not be made in these screens.

21.2.4. Control Panel

This group of functions allows for extensive configuration changes

21.2.5. Accessories

Figure 21-2: Accessories



21.2.5.1.Paintbrush

This function allows editing of bitmap files. This can be very useful during troubleshooting to create a file or printout that contains a copy of a screen. The file is created by pressing the <Print Scrn> key at the screen to be copied then opening Paintbrush and choosing PASTE from the EDIT menu. The file can then be printed or saved either on the hard drive for remote retrieval or a floppy disk. Save the file as a 16 color bitmap to fit on a floppy disk.

22. OPERATING SYSTEMS PROCEDURES

22.1. Windows NT Workstation 3.51

Windows NT Workstation 3.51 is used as the operating system for the GEN•S Workstation and must be installed and configured before installation of the GEN•S Application. This section contains the following procedures:

- **Last known good configuration** will remove any changes from the registry made since the system was previously powered up.
- **Producing Windows NT Workstation 3.51 Boot Disks** allows disks to be made that allow NT 3.51 to be installed from CD-ROM.
- **Producing an Emergency Repair Disk** allows a disk to be made that contains the Registry from NT 3.51. The registry contains most of the custom configurations made to the operating system and many of the parameters for the GEN•S Application.
- **Repair with an Emergency Repair Disk** will restore the GEN•S Workstation to the configuration when the Emergency Repair Disk was made.
- **Complete installation** installs the complete operating system and includes formatting the hard drive. (This can be done using the procedure in Section 20.1.2.)

22.1.1. Windows NT Workstation 3.51 Last Known Good Configuration

Operating System Repair Using the Last Known Good Configuration

Required Resources:

- N/A

1. Power Down the GEN•S Workstation.
2. Select WINDOWS NT 3.51.
3. Press the space bar at the prompt.

22.1.2. Producing Windows NT Workstation 3.51 Boot Disks

Windows NT Workstation 3.51 Repair Using the Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Three (3) blank high density floppy disks labeled: Windows NT 3.51 BOOT DISK 1, Windows NT 3.51 DISK 2, and Windows NT 3.51 DISK 3.
- GEN•S Workstation Installation and System Help CD-ROM

1. Run “H:\I386\WINNT32 /OX” (type exactly as shown – letter “O”, not zero). *The disks can also be made on a GEN•S Workstation using the same command from the CD-ROM on a computer with Windows 95 by replacing H with the correct drive letter. On*

a computer with DOS or Windows version earlier than 95, use the command "CD-ROM Drive":\I386\WINNT /OX.

2. Choose CONTINUE to accept default directory, H:\I386.
3. Insert disk 3 at prompt, then choose OK and follow prompts for disk 2 and disk 1.
4. When disk 1 is completed, the program will close automatically.

22.1.3. Producing a Windows NT Workstation 3.51 Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Emergency Repair Disk (1 blank 3 ½ High Density Disk labeled Emergency Repair Disk, *Computer Name*, and *today's date*).

1. Logon using Service User or LABADMIN.
2. Run RDISK.EXE /S.
3. Insert the Emergency Repair Disk in drive A:.
4. Choose YES to create the EMERGENCY REPAIR DISK.
5. Choose OK to ERASE ALL DATA ON THE FLOPPY DISK.
6. The program will format the disk, then copy the configuration files.
7. The Emergency Repair Disk is completed when the screen changes back to the REPAIR DISK UILITY screen.

22.1.4. Windows NT Workstation 3.51 Repair Using the Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Emergency Repair Disk
- GEN•S Workstation Installation and System Help CD-ROM
- Windows NT Floppy Disks (3)

Step A - Loading From Floppy Disk

1. With the GEN·S Workstation powered off Insert Windows NT installation disk 1 in drive A:
2. Power on the GEN·S Workstation.
3. Choose UPDATE REPAIR INFO (at the REPAIR DISK UTILITY screen), then choose YES.
4. At prompt insert the Windows NT Setup disk 2 in drive A: then press <ENTER>.

5. Press R to REPAIR A DAMAGED WINDOWS NT VERSION 3.51 at the prompt.

6. Press <ENTER> to Continue with all options selected.

7. Press <ENTER> to have Setup detect mass storage devices.

8. At the prompt load Windows NT installation disk 3 then press <ENTER>.

9. Press <ENTER> at prompt on screen that shows the two devices listed below were recognized.
    - Future Domain 16xx / PCI / SCSI / SCS12Go
    - IDE CD-ROM (ATAPI) 1.2) / Dual-channel PCI IDE

Step B - Loading From CD-ROM

1. Load Windows NT 3.51 CD-ROM then press <ENTER> to confirm installation from CD-ROM.

2. Press <ENTER> to confirm that an Emergency Repair Disk is available.

3. Insert the Emergency Repair Disk in drive A: then press <ENTER>.

4. Select only the option(s) that you are attempting to repari then select CONTINUE.

5. If setup determines that a file is not the original file, **unless you are attempting to replace this specific file do not select either option to replace any files.**

6. At prompt remove floppy disk in drive A: then press <ENTER> to reset computer.

22.1.5. Windows NT Workstation 3.51 Installation Procedure

Windows NT Workstation 3.51 Installation Procedure

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

CAUTION: Loss of Data. The complete installation of an operating system will format the drive resulting in the loss of all data.

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM
- Windows NT Floppy Disks (3)

Step A - Loading From Floppy Disk

1. Power off all SCSI Devices.

2. With the GEN•S Workstation powered off, insert the Windows NT Boot disk 1 in drive A:.

3. Power on the GEN•S Workstation.

4. At prompt insert the Windows NT Setup disk 2 in drive A: then press <ENTER>.

5. At prompt press <ENTER> to setup Windows NT now.

6. Press “C’ to select Custom Setup at the prompt.

7. Press <ENTER> to have Setup detect mass storage devices.

8. At the prompt load Windows NT installation disk 3 then press <ENTER>.

9. Press <ENTER> to continue without loading any additional drivers at screen that shows that two devices listed below were recognized.

    - Future Domain 16xx / PCI / SCSI2Go
    - IDE CD-ROM (ATAPI) 1.2) / Dual-channel PCI IDE

Step B - Loading From CD-ROM

1. Load the GEN•S Workstation Installation and System Help CD-ROM, then press <ENTER> to confirm installation from CD-ROM.

2. If the installation program locates a prior installation of Windows NT on the hard drive, an option to upgrade appears. Press N to install a fresh copy of Windows if this option is given.

3. Press <ENTER> at the computer component list Displaying
    - Computer: Standard PC
    - Display: VGA or Compatible
    - Keyboard: XT,AT or Enhanced Keyboard (83-102 keys)
    - Keyboard Layout: US
    - Pointing Device: Microsoft port mouse <including ballpoint>
    - No Changes: The above list matches my computer.

4. At the next screen if the disk is partitioned press D then press <ENTER> and confirm by pressing L. If the disk is not partitioned go to next step.

5. Repeat the previous step for all drives listed. Use the up/down arrow keys to select each drive.
6. Press C to create a partition with the UNPARTITIONED SPACE selected.

7. If the computer base has a 1.2 GB drive, press <ENTER> at the screen that displays the size of the drive and go to Step 8. If the computer base has a 3.2 GB drive, complete Steps A. to C.
    - A) Enter “1024”, then press <ENTER>
    - B) Select the remaining UNPARTITIONED SPACE, then press C to create a partition.
    - C) Press <ENTER> to accept 2040 MB for the second partition.

8. At the next prompt press <ENTER> to accept “C:\” as the new (unformatted) install location.

9. Select Format the partition using the NTFS File System then press <ENTER> .

10. Accept the default directory \WINNT35 by pressing <ENTER>.

11. Press <ENTER> to allow Setup to complete exhaustive examination of the hard drive.

12. At prompt remove floppy disk in drive A: then press <ENTER> to reset computer.

Step C - Initial Operating System Computer information

1. Enter “Coulter Corporation” in the NAME field, “Coulter Corporation” in the COMPANY field then choose CONTINUE.

2. Choose CONTINUE to confirm names entered in the previous screen.

3. Do not enter anything in the product ID field, select Continue.

4. Choose Continue to confirm the product ID.

5. Enter “GENS” with the Computer serial number added on in the Computer Name Field, then choose CONTINUE. **DO NOT ENTER ANY SPACES IN THE NAME AND USE THE COMPLETE SERIAL NUMBER** (i.e., if the serial number is 12345, then the name would be GENS12345).

6. Choose CONTINUE to confirm the Computer Name Field.

7. Choose CONTINUE to select the default language ENGLISH (UNITED STATES).

Step D - Initial Network Setup

1. Select only NETWORK at optional task screen then choose CONTINUE. Use the mouse to remove other check boxes selected by default.

2. Choose DO NOT DETECT at the NETWORK ADAPTER CARD DETECTION screen.

3. Choose CONTINUE to select network card manually.

4. Select the network card that is installed, then choose CONTINUE.(If the network card is not listed complete the following steps then load the driver after loading NT. Choose: NO NETWORK, OK ,EXIT WINDOWS NT WORKSTATION NETWORKING SETUP then continue at Step E.).

5. Choose CONTINUE to accept the default path “CD-ROM-DRIVE”:\i386.

6. Select NETBUI TRANSPORT then choose CONTINUE.

7. Choose OK to exit the NETWORK SETTINGS screen.

8. Choose OK to accept the default WORKGROUP called WORKGROUP at the DOMAIN /WORKGROUP SETTINGS screen.

Step E - Initial User Account Setup

1. Enter “coulter”,(this must be lowercase), for password and for CONFIRM PASSWORD at ADMINISTRATOR ACCOUNT SETUP, then choose CONTINUE.

2. Enter “GENS” for USERNAME and “coulter”, (this must be lowercase), for PASSWORD and for CONFIRM PASSWORD at LOCAL ACCOUNT SETUP, then choose CONTINUE.

Step F - Completion of Operating System Setup

1. If the computer base has 32 MB of RAM, choose CONTINUE to accept 43 MB for Virtual Memory paging file on drive C. If the computer base has 64 MB of RAM, choose CONTINUE to accept 75 MB for VIRTUAL MEMORY PAGING FILE ON DRIVE C.

2. Select the correct TIME, DATE and TIME ZONE then choose OK.

3. Choose OK at message that an S3 COMPATIBLE DISPLAY ADAPTER was detected.

4. Select 1024 x 768 for desktop, 65536 colors as Color Palette, small fonts as Font Size and 70Hz as Refresh Frequency, then choose TEST.

5. Choose OK at TESTING MODE screen.

6. After test is completed, choose YES to confirm that test was OK (troubleshoot after loading NT if the display is not clear and stable).

7. Choose OK at DISPLAY SETTINGS prompt.

8. Choose OK at the DISPLAY SETTINGS screen to complete the display options.

9. Choose NO at prompt to CREATE AN EMERGENCY REPAIR DISK.

10. Choose RESTART COMPUTER.

11. Press <ENTER> or allow the default time of 30 seconds to expire to accept WINDOWS NT WORKSTATION VERSION 3.51.

12. Repeat the previous step after hard drive is converted to the NTFS file system.

13. Logon using the ADMINISTRATOR account and use this account for all logons for the remaining steps in this procedure.

Step G - CD-ROM Drive Assignment and Drive D formatting

1. Choose DISK ADMINISTRATOR from the ADMINISTRATOR TOOLS group.

2. Choose OK at Disk Administrator prompt that this is the first time DISK ADMINISTRATOR has been run (This prompt will open behind Program Manager. Hold the ALT key down and use the TAB key to move to prompt.)

3. If CONFIRM prompt appears, choose YES (this only appears the first time DISK ADMINISTRATOR is run with a hard drive.)

4. If the computer base has a 1.2 GB drive, go to Step 10.

5. Select the D: drive by clicking on it once.

6. From the TOOLS pull down menu, select FORMAT.

7. Choose OK at FORMATTING D: prompt with the FILE SYSTEM at the default NTFS.

8. Choose YES to confirm.

9. Choose OK at FORMAT COMPLETE.
10. Choose CD-ROM DRIVE LETTERS from the TOOLS pull down menu.
11. Select H for the DRIVE LETTER.
12. Choose Change.
13. Choose YES to CONFIRM.
14. Close DISK ADMINISTRATOR.

Step H - Loading Drivers

1. Load the drivers for the network card (using the procedure list in Section 5), if it has not already been loaded.
2. The drivers for the touchscreen are loaded automatically during the GEN•S Application install.
3. Load the drivers for the multi-port serial card using the procedure listed in Section 4.
4. Load the drivers for the sound card using the procedure listed in Section 7.
5. Load the drivers for the light pen card using the procedure listed in Section 2.
6. Load RCS using the procedure in section 23.1.1.
7. Load TCP/IP using the procedure in section 22.1.6.

Step I - Loading Service Pack

1. Run “H:\SVCPACK4.351\UPDATE.EXE”.
2. Choose OK at SETUP MESSAGE.
3. Click on RESTART COMPUTER icon at prompt.

Step J - Configure Default Boot Wait Time

1. Choose CONTROL PANEL from the MAIN group.
2. Choose SYSTEM from Control PANEL.
3. Enter “3” for SHOW LIST FOR then choose OK.

22.1.6. Windows NT Workstation 3.51 TCP/IP Setup

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM

1. Insert the GEN·S Workstation Installation and System Help CD in the CD-ROM drive.
2. Choose CONTROL PANEL from the MAIN group in Program Manager.

3. Choose NETWORK from CONTROL PANEL.

4. Choose ADD SOFTWARE from NETWORK.

5. Select TCP/IP PROTOCOL AND RELATED COMPONENTS for NETWORK SOFTWARE: then choose CONTINUE.

6. Select only SIMPLE TCP/IP SERVICES and ENABLE AUTOMATIC DHCP CONFIGURATION then choose CONTINUE.

7. Choose CONTINUE to accept the default path “H:\I386\”.

8. Choose OK at the SETUP MESSAGE to configure RAS to support TCP/IP.

9. Choose Network at the REMOTE ACCESS SETUP screen.

10. Select TCP/IP, (located in the SERVER SETTINGS area of the screen), then choose CONFIGURE, (located beside TCP/IP in the SERVER SETTINGS area.

11. Select THIS COMPUTER ONLY, USE STATIC POOL and enter 172.016.000.000 for BEGIN and 172.31.255.255 for END then select ALLOW REMOTE CLIENT TO REQUEST A PREDETERMINED IP ADDRESS.

12. Choose OK at RAS SERVER TCP/IP CONFIGURATION.

13. Choose OK at NETWORK CONFIGURATION.

14. Choose CONTINUE at REMOTE ACCESS SETUP.

15. Choose BINDINGS at NETWORK

16. Select **TCP/IP PROTOCOL ->[1]”NETWORK CARD DRIVER”->[1] NETWORK CARD**.

17. Choose DISABLE then OK to complete the NETWORK BINDINGS.

18. Select **TCP/IP** protocol from Network Software:.

19. Choose CONFIGURE then select ENABLE AUTOMATIC DHCP CONFIGURATION.

20. At DO YOU WANT TO ENABLE DHCP?, choose YES.

21. Enter **“172.30.0.1”** for Default Gateway.

22. Enter “**172.30.0.1**” for Primary WINS Server.

23. Enter “**172.30.0.1**” for Secondary WINS Server.

24. Choose DNS Configuration. The “Host Name: “ field displays the computer name (“GENSxxxxx” where “xxxxx” is the GEN·S Workstation serial number).

25. Enter “**coulter.com**” for DOMAIN NAME:” then choose OK.

26. Choose ADVANCED … then enter “**172.30.0.1**” for “Default Gateway”.

27. Select **ENABLE DNS FOR WINDOWS NAME RESOLUTION** then choose OK.

28. Chose OK at TCP/IP CONFIGURATION.

29. Chose OK at NETWORK SETTINGS.

30. Choose RESTART NOW to shutdown and restart the Workstation.

31. Add an account called RCS to the Phone Book of Remote Access Manager with TCP/IP and NETBIOS protocols both enabled.

22.1.7. Windows NT Security Setup

1. Create users with passwords and group memberships according to the software design specifications.

2. Remove administrative files from the hard drive according to the software design specifications.

3. Logoff then logon and at WELCOME, enter “**LabAdmin**” for USERNAME then choose OK. The “LabAdmin” user name then will be the default user shown at the “Welcome” dialog.

22.1.8. Anti-Virus installation

1. Insert the “GEN·S Workstation Installation and System Help” CD in the CD-ROM drive.

2. From the FILE pull-down menu in PROGRAM MANAGER run **“H:\NAVNT\SETUP.EXE”.**

3. Enter “**COULTER CORPORATION**” as the Company Name then choose NEXT to accept COULTER CORPORATION as the Full Name and the Company Name.

4. Choose NEXT at the ONLINE LICENSE AGREEMENT and the PROGRAM LOCATION prompts.

5. At the prompt NORTON ANTIVIRUS FOR WINDOWS NT SETUP un-select “AUTOMATICALLY START AUTO-PROTECT” then choose NEXT with only “SCHEDULE WEEKLY SCANS OF LOCAL HARD DRIVES” selected.

6. Choose NEXT at the SETUP REVIEW, IMPORTANT REMINDERS, SYMANTEC SUPPORT SOLUTIONS and the HOW TO REACH US prompts.

7. Choose SKIP at the REGISTER NOW prompt.

8. Choose FINISH at the SETUP COMPLETE prompt with SCAN FOR VIRUSES NOW selected.

22.2. Windows NT Workstation 4.0

Windows NT Workstation 4.0 replaces version 3.51 as the operating system for the GEN•S Workstation. The following Windows NT Workstation 4.0 procedures are included in this section:

- **Complete installation** This procedure is not contained in this document. This is documented in the software release documentation and followed to create the image CD-ROM.
- **Installation and Upgrade Procedures:** These are not contained in this document. They are documented in service memos.
- **Last Known Good Configuration** - This removes all changes made to the registry since the last time Windows NT was booted up.
- **Producing Windows NT 4.0 Boot Disks** - This allows floppy disks to be produced that can be used with the Emergency Repair Disk
- **Producing an Emergency Repair Disk** - This makes a disk that contains configuration information for the GEN•S Workstation
- **Repair with an Emergency Repair Disk** can be used to make minor repairs to the Windows NT Boot files.

22.2.1. Windows NT Workstation 4.0 Last Known Good Configuration

Operating System Repair Using the Last Known Good Configuration

Required Resources:

- N/A

1. Power Down the GEN•S Workstation.
2. Select WINDOWS NT 4.0.

Press the space bar at the prompt.

22.2.2. Windows NT Workstation 4.0 Producing Windows NT 4.0 Boot Disks

Windows NT Workstation 3.51 Repair Using the Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Three (3) blank high density floppy disks labeled: Windows NT 3.51 BOOT DISK 1, Windows NT 3.51 DISK 2, and Windows NT 3.51 DISK 3.
- GEN•S Workstation Installation and System Help CD-ROM

1. Run “H:\I386\WINNT32 /OX” (type exactly as shown – letter “O”, not zero). *The disks can also be made on a GEN•S Workstation using the same command from the CD-ROM on a computer with Windows 95 by replacing H with the correct drive letter. On*

a computer with DOS or Windows version earlier than 95, use the command "CD-ROM Drive":\I386\WINNT /OX.

2. Choose CONTINUE to accept default directory, H:\I386.
3. Insert disk 3 at prompt, then choose OK and follow prompts for disk 2 and disk 1.
4. When disk 1 is completed, the program will close automatically.

22.2.3. Windows NT Workstation 4.0 Producing an Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Emergency Repair Disk (1 blank 3 ½ High Density Disk labeled Emergency Repair Disk, *Computer Name*, and *today's date*).

1. Logon using Service User
2. Run RDISK.EXE /S.
3. Insert the Emergency Repair Disk in drive A:.
4. Choose YES to create the EMERGENCY REPAIR DISK.
5. Choose OK to ERASE ALL DATA ON THE FLOPPY DISK.
6. The program will format the disk, then copy the configuration files.
7. The Emergency Repair Disk is completed when the screen changes back to the REPAIR DISK UILITY screen.

22.2.4. Windows NT Workstation 4.0 Repair with an Emergency Repair Disk

Warning: This procedure is intended to use solely for evaluation or demonstration purposes. It is not intended for use on instruments that are reporting patient samples.

Required Resources:

- Emergency Repair Disk
- GEN•S Workstation Installation and System Help CD-ROM
- Windows NT Floppy Disks (3)

Step A - Loading From Floppy Disk

1. With the GEN·S Workstation powered off Insert Windows NT installation disk 1 in drive A:
2. Power on the GEN·S Workstation.
3. Choose UPDATE REPAIR INFO (at the REPAIR DISK UTILITY screen), then choose YES.

4. At prompt insert the Windows NT Setup disk 2 in drive A: then press <ENTER>.

5. Press R to REPAIR A DAMAGED WINDOWS NT VERSION 3.51 at the prompt.

6. Press <ENTER> to Continue with all options selected.

7. Press <ENTER> to have Setup detect mass storage devices.

8. At the prompt load Windows NT installation disk 3 then press <ENTER>.

9. Press <ENTER> at prompt on screen that shows the two devices listed below were recognized.
    - Future Domain 16xx / PCI / SCSI / SCS12Go
    - IDE CD-ROM (ATAPI) 1.2) / Dual-channel PCI IDE

Step B - Loading From CD-ROM

1. Load Windows NT 4.0 CD-ROM then press <ENTER> to confirm installation from CD-ROM.

2. Press <ENTER> to confirm that an Emergency Repair Disk is available.

3. Insert the Emergency Repair Disk in drive A: then press <ENTER>.

4. Select only the option(s) that you are attempting to repari then select CONTINUE.

5. If setup determines that a file is not the original file, **unless you are attempting to replace this specific file do not select either option to replace any files.**

6. At prompt remove floppy disk in drive A: then press <ENTER> to reset computer.

23. REMOTE ACCESS SERVICE (RCS)

23.1. Remote Access Service Installation with Windows NT 3.51

23.1.1. RAS Software Installation

Required Resources:

- GEN•S Workstation Installation and System Help CD-ROM

1. Choose CONTROL PANEL from the MAIN group.
2. Choose NETWORK from CONTROL PANEL.
3. Choose ADD SOFTWARE from NETWORK.
4. Select REMOTE ACCESS SERVICE then choose CONTINUE.
5. Ensure the path is H:\i386 then choose CONTINUE.
6. Select COM 3 at the prompt for ADD PORT then choose OK.
7. Choose CANCEL to allow manual setup of modem.
8. Select US ROBOTICS SPORTSTER 28800 V34 and DIAL OUT AND RECEIVE CALLS, then choose OK.
9. Select DISABLE AUTOMATIC RESTORATION OF CONNECTIONS AT LOGON then choose NETWORK.
10. Choose CONFIGURE located beside NetBEUI.
11. Select THIS COMPUTER ONLY then choose OK.
12. Choose OK at the NETWORK CONFIGURATION screen with the default REQUIRE MICROSOFT ENCRYPTED AUTHENTICATION selected.
13. Choose CONTINUE at REMOTE ACCESS SETUP.
14. Choose OK at NETWORK SETTINGS.
15. Choose RESTART NOW.

23.1.1.1.RCS User Account Setup

1. The RCS user is created during installation of the GEN•S Workstation Application.

23.1.1.2.RCS User Account Security Setup

This must be completed after installing the GEN•S Workstation Application.

1. Choose REMOTE ACCESS ADMIN from REMOTE ACCESS SERVICE (Common) group.
2. Choose PERMISSION from the Users pull down menu.

3. Select SERVICERCS, GRANT DIALING PERMISSION TO USER, then choose OK.

4. Close the REMOTE ACCESS SERVICE (Common).

23.1.2. pcAnywhere Setup with Windows NT 3.51

STEP A: Loading

1. Confirm the customer has been provided the software licenses for SYMANTEC™ NORTON ANTIVIRUS™ and SYMANTEC™ pcANYWHERE32™.

2. Shutdown and restart the Workstation then log on with the user name **SER**. Double click on FILE MANAGER located in the MAIN group.

3. Choose *RENAME* from the FILE pull down menu and enter **"C:\WINNT35\SYSTEM32\SMSS.EXE"** at FROM and **"C:\WINNT35\SYSTEM32\SMSS.OLD"** at TO then choose OK

4. Choose *COPY* from the FILE pull down menu and enter **"H:\PCANY32\SMSS.EXE"** at FROM and "**C:\WINNT35\SYSTEM32\SMSS.EXE**" at TO then choose *OK*.

5. Choose *COPY* from the FILE pull down menu and enter **"H:\PCANY32\"** at FROM and **"C:\"** at TO then choose OK.

6. Close FILE MANAGER then from the FILE pull-down menu in PROGRAM manager run **"ATTRIB -R C:\PCANY32\ANYWHERE.BIN".** (There is one space before and one space after "-R".)

7. From the FILE pull-down menu in PROGRAM manager run **"C:\PCANY32\SETUP.EXE"**.

8. Enter **"COULTER CORPORATION"** as the Full Name and the Company Name then choose *NEXT*.

9. Choose *NEXT* at the ONLINE LICENSE AGREEMENT, PROGRAM LOCATION and at the SETUP REVIEW prompts.

10. Choose *NEXT* at, the SYMANTEC SUPPORT SOLUTIONS, HOW TO REACH US and the WINDOWS 95 SOLUTIONS prompts.

11. Choose *SKIP* at REGISTER NOW.

12. Choose *FINISH* at INSTALLATION COMPLETE with RESTART WINDOWS NOW RECOMMENDED selected.

STEP B: Configuring

13. Logon using the username **"SER"**.

14. Choose *pcANYWHERE* from the pcANYWHERE 32(COMMON) group.

15. Choose *NEXT* to accept the defaults for the MODEM, NETWORK and the CABLE CONNECTION. (The defaults are; modem set to COM1with a HAYES COMPATIBLE modem, network set to default device TCP/IP and the cable connection set to COM1.)

16. Choose the *BE A HOST* button.

17. Select DIRECT then press <**DELETE**> and choose *YES* to delete the selected item then select MODEM press <**DELETE**> and choose *YES* to delete the selected item.

18. Double click on NETWORK to run the network host.

19. Wait 1 minute then press <**CTRL**> + <**ESC**>, select *PCANYWHERE WAITING* then choose *END TASK*.

20. Choose *END TASK* at next prompt.

21. If it is not minimized, minimize the pcANYWHERE 32(COMMON) group, select the *pcANYWHERE 32(COMMON)* group icon with a single mouse click, press <**ESC**>, then press <**DEL**> and choose *YES* to confirm.

23.2. Remote Access Service Installation with Windows NT 4.0

23.2.1. RAS Software Installation

The software is installed and configured during the imaging procedure to install the software.

Required Resources:

- None

UNINTERRUPTIBLE POWER SUPPLIES

24. UNINTERRUPTIBLE POWER SUPPLIES (UPS)

This section contains descriptions and configuration details for Uninterruptible Power Supplies. If the UPS is not listed in this section refer to the manual included with the UPS for installation instructions.

24.1. APC Back-UPS®

Caution: UPS overload condition. Do not connect a printer to the UPS.

24.1.1. Hardware Configuration (Do not connect UPS to ac until step 5)

1. Shutdown the GEN•S Workstation.
2. Disconnect computer base from ac.
3. Connect the included serial interface cable from the serial connector on the rear of the UPS to COM1 on the computer base.
4. Plug the GEN•S Workstation into an ac outlet on the rear of the UPS.
5. Ensure the UPS power on switch is in the off position then Plug the UPS in an ac outlet.
6. Power on the UPS using the power on switch.

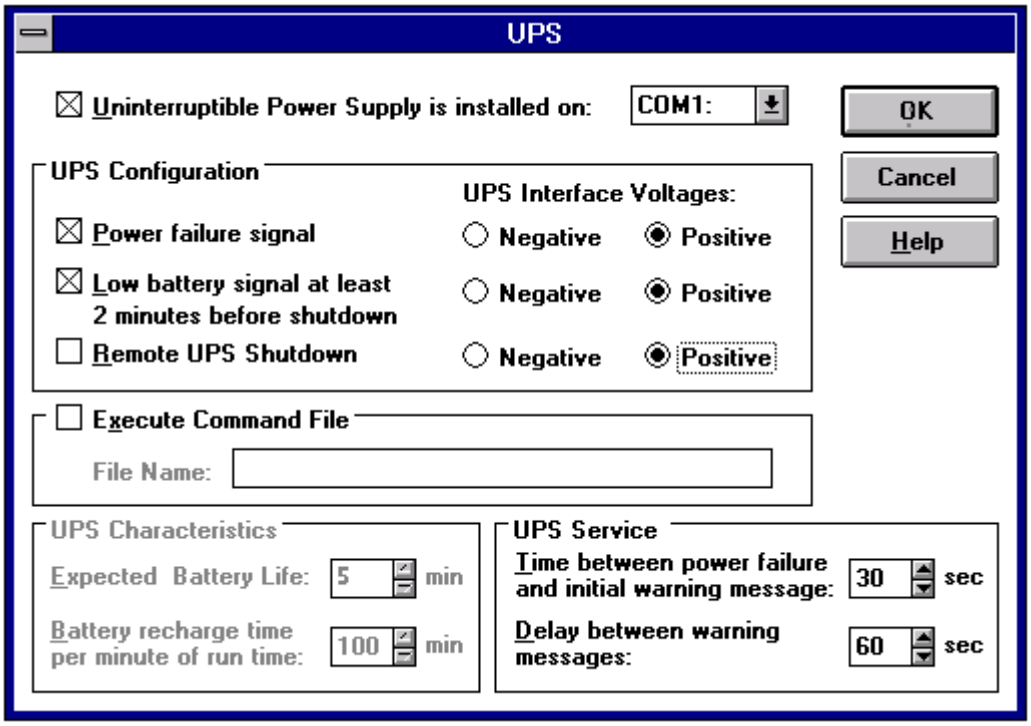
24.1.2. APC Back UPS 450 Software Configuration

Required Resources:

- APC UPS installed with hardware configured.

1. Choose UPS from CONTROL PANEL.
2. Select checkbox to the left of UNINTERRUPTIBLE POWER SUPPLY IS INSTALLED ON;.
3. Select POWER FAIL SIGNAL and LOW BATTERY SIGNAL then select Positive for the UPS INTERFACE VOLTAGE on all three (3) UPS Configuration settings. Leave COM1 as the UPS port that it is installed on.
4. Select 30 for the TIME BETWEEN POWER FAILURE AND INITIAL WARNING MESSAGE.
5. Select 60 for DELAY BETWEEN WARNING MESSAGES.
6. Choose OK .
7. Choose YES to start the UPS SERVICE.
8. Complete Section 26.8 UPS Verification.

Figure 24-1: APC Back UPS 450 Software Configuration



INSTALLATION

25. GEN•S WORKSTATION

25.1. One GEN•S Workstation with one or two GEN•S Analytic Station(s)

WARNING: Electronic Shock. Routing and attaching cables with the power on could result in injury from an electronic shock. Turn off the power before connecting cables

CAUTION: Electronic Damage. Attaching electronic cables with the power on could damage the electronic components. Turn off power before connecting cables.

CAUTION: Electronic Damage. If the system arrives in cold weather, do not unpack the computer or the monitor until they have been allowed to come to room temperature. Immediately exposing them to a warm room may cause condensation to occur. If condensation does occur, allow the components to completely dry before powering on.

25.1.1. GEN•S Workstation Installation Procedure

Required Workstation Components:

Monitor including:

- a touchscreen cable, (Touchscreen monitors only -- this cable is not the same as the UPS cable)
- a power cable

Computer base including:

- a power cable
- a mouse
- a telephone cable
- audio cable
- Barcode Scanner
- two keys, (there are also one set of spare rails for drive installation and replacement screws included but not required during installation)
- a light pen with extension cable and Y connector cable
- UPS cable (this cable is not the same as the touchscreen cable)

Optional accessories may include:

- archiving drive
- monitor arm kit with extension cables

Required Installation Area

Installation area

- The area to the right of the Analytical Station as described in Section 3 of the GEN•S Service Manual

1. COMPLETE STEPS 1-9 BEFORE YOU POWER ON THE GEN•S WORKSTATION.

Unpacking and A/C Voltage Configuration

1. Unpack the system and carefully inspect for any shipping damage. Save the packing material until the system verification is completed.

2. Set the line voltage switch for the correct ac voltage and connect the monitor power cable to the computer base.

CAUTION: Electronic damage. Applying the wrong voltage to the computer base can damage the electronic components. Set the line voltage switch on the computer base to the correct ac voltage.

Cable Connections as shown in Figure 25-1.

1. Insert the end of the mouse cable into the computer base. The connector is keyed. If a connector does not plug in easily verify the orientation of the key, do not force.

2. Connect the keyboard cable to the Barcode Scanner cable and insert the Barcode Scanner cable into the computer base. The Barcode Scanner connections are described in Section 15, Barcode Readers.

3. Place the monitor on top of the computer base.

4. If a touchscreen monitor is being installed, connect the touchscreen interface cable to COM2 on the computer base and to the touchscreen connector on the monitor.

5. Connect the light pen to the extension cable and plug the extension into the light pen circuit card.

6. Connect the light pen Y cable end connectors to the video card and monitor video cable then connect the center connector to the light pen card.

7. Connect the audio cable from the SPKR connector on the sound card to the monitor audio connector on the sound card.

8. Connect the analog telephone line to the TELCO connector on the modem and to the wall jack telephone connection.

9. Connect the host(s) and analytical station(s) to the four connector cables connected to the multi-port serial card.

10. Complete the Verification below.

Verification

1. If an Analytical Station is also being installed, complete the GEN•S Workstation Hardware Verification, Section 26.3. If only the GEN•S Workstation is being installed, complete the GEN•S Workstation Functional Verification, Section 26.2.

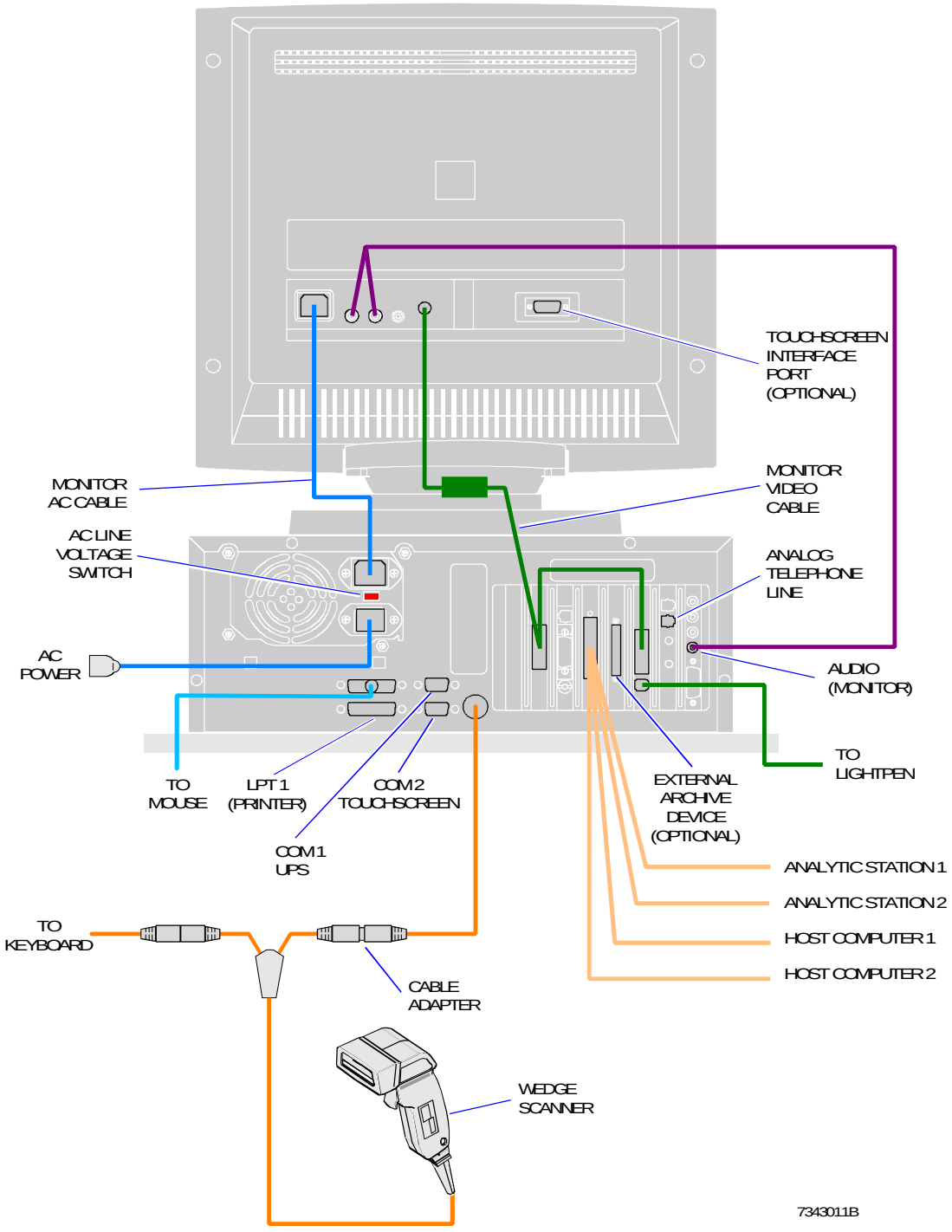
Note: Complete the Verification Procedures before installing any software or hardware. Failure to complete this step can cause extensive configuration problems.

UPS Installation

1. Install UPS. Follow the procedures in Section 24. If the UPS is not listed, use the OEM documentation included with the UPS.

Refer to the specific component section in this manual for connections if the component is not shown in the following figure.

Figure 25-1: GEN•S Workstation Cable Connections



VERIFICATION PROCEDURES

26. VERIFICATION PROCEDURES

26.1. Display Verification

1. Choose DISPLAY from CONTROL PANEL.
2. If the operating system is Windows NT 4.0 select the SETTINGS tab.
3. Choose TEST.
4. Choose OK.
5. Verify the display matches the descriptions on the screen, is stable and the black border around the display inside the case is sized evenly and parallel to the case. The monitor configuration settings are in Section 14 of this document.
6. Choose YES at TESTING MODE prompt.
7. Choose DON'T RESTART NOW.
8. Choose CANCEL to close DISPLAY SETTINGS.
9. Close CONTROL PANEL.

26.2. GEN•S Workstation Functional Verification

1. Complete procedure in Section 26.3.
2. Setup the GEN•S Workstation to receive patient samples in SAMPLE ANALYSIS mode.
3. Run a minimum of ten samples with all tests modes on.
4. Verify that all data has been received and is in the database.
5. If the GEN•S Workstation has a printer attached print the samples and verify the printouts.

26.3. GEN•S Workstation Hardware Verification

1. Turn on the UPS if it is installed and powered down.
2. Power on the GEN•S Workstation and logon if it is powered down.
3. As the system logs on listen for the TADA sound to verify the audio is functional.
4. Use procedure in Section 26.4 to verify the host interface communication.
5. Use procedure in Section 26.5 to verify the light pen.
6. Use procedure in Section 26.1 to verify the display.
7. If an analog line is connected use procedure in Section 26.6 to verify operation of the modem.
8. If a touchscreen is installed use procedure 26.7 to verify operation.
9. Use the procedure in section 26.8, Steps 1 through 6, to verify the UPS.
10. Use procedure in chapter 26.9 to verify transmission from the GEN•S Analytical Station.

26.4. Host Interface Communication Verification

1. Transmit to host computer.
2. Verify transmission was successful.
3. Transmit from host to GEN•S Workstation if the interface is configured for bi-directional communication.
4. Verify transmission was successful.

26.5. Light Pen Verification

1. Touch the light pen to the screen in an area without any displayed buttons and move it across the screen. If the cursor does not follow the light pen when screen is touched verify the configuration in Section 2.1.2 of this document before going to step 2.

2. Use the light pen for the following steps.

3. Choose MOUSE from the CONTROL PANEL.

4. Tap the TEST button twice with the light pen and verify it changes color.

5. Choose Cancel.

6. Close CONTROL PANEL.

26.6. Remote Communication Service Verification

1. Verify the analog telephone line is connected to the telephone line and the modem.
2. Enable RCS on the Workstation.
3. Verify that RCS can be used to connect to the Workstation.

26.7. Touchscreen Verification

1. Touch the screen in an area without any displayed buttons and move your finger. If the cursor does not follow your finger when the screen is touched verify the configuration in Section 18 of this document before going to step 2.

2. Use the touchscreen for the following steps.

3. Choose CONTROL PANEL from the MAIN group.

4. Choose MOUSE from the CONTROL PANEL.

5. Tap the TEST button twice with you finger and verify it changes color.

6. Choose Cancel.

7. Close CONTROL PANEL.

26.8. UPS Verification

1. Before this verification is run the UPS battery must be charged.
2. Choose EXIT from GEN•S Application.
3. Select Shutdown then choose OK.
4. When message appears that system can be powered off disconnect UPS from ac and verify that the GEN•S Workstation remains powered up for two minutes.
5. Reconnect UPS to ac.
6. Boot the GEN•S Workstation.
7. Disconnect UPS from ac and verify after 30 seconds a message appears that power has failed.
8. Reconnect UPS to ac.

26.9. GEN•S Workstation to Analytical Station Communication Verification

1. Run the RAMP test on the GEN•S Analytical Station.
2. Verify in the STARTUP screen on the GEN•S Workstation that the RAMP test has been received.
3. Setup the GEN•S Workstation to receive patient samples in SAMPLE ANALYSIS.
4. Run a minimum of two samples with all tests modes on.
5. Verify that all data has been received and is in the database.

MAINTENANCE AND TROUBLESHOOTING

27. REPLACEMENT PROCEDURES

Caution: The case of the GEN·S Workstation should only be removed during repair by experienced computer technicians. The GEN·S Workstation configuration utilizes hardware and auto configurable circuit cards. Installation of circuit cards can create a non working system that cannot be corrected without extensive reconfiguration even if the new circuit card is removed.

27.1. AMI Atlas PCI-II and PCI-III

27.1.1. Removal of the Computer Base Top Cover

Required Resources:

- Tamperproof screwdriver

1. Shutdown GEN•S Installation.
2. Power off the computer base.
3. Turn power off to all peripheral devices then power off and unplug computer base.
4. Move the monitor off the computer. If necessary, disconnect the monitor cables.
5. Remove the four tamperproof mounting screws on the rear of the cover. Carefully slide the cover off the chassis by moving it towards the rear of the unit one inch then lift cover off.

27.1.2. Installation of the Computer Base Top Cover

Required Resources:

- Tamperproof screwdriver

1. Check that all copper EMI pressure strips are seated firmly and that none are loose inside the computer base.
2. As shown in Figure 27-1, with the cover above the base and one inch behind the final position hold the cover at the front sides and push the sides in while lowering the cover to ensure front side clips fit onto side rails.
3. As shown in Figure 27-2, raise the rear of the cover and push the rear sides in while lowering the cover to ensure rear clips fit onto side rails.
4. As shown in Figure 27-3, slide the cover forward into the final position while pushing down on the cover to ensure top cover clips slide into the front rail.
5. Replace the four tamperproof mounting screws.

Figure 27-1: AMI Atlas Computer Base Cover -- Step 1

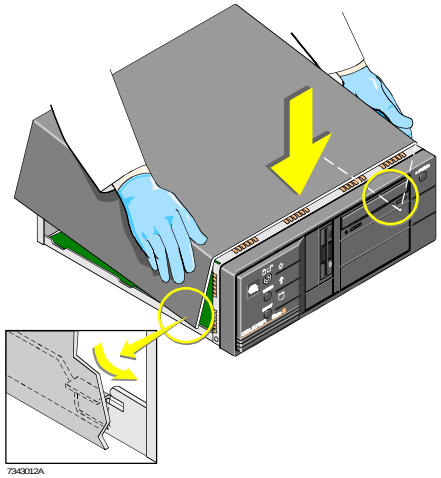


Figure 27-2: AMI Atlas Computer Base Cover -- Step 2

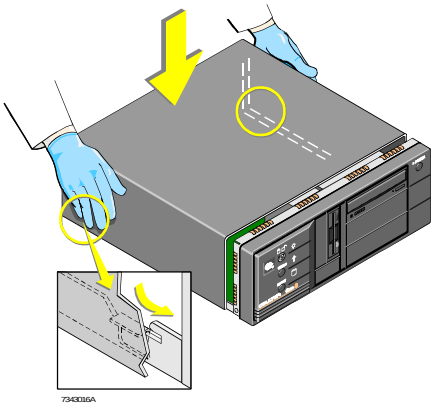
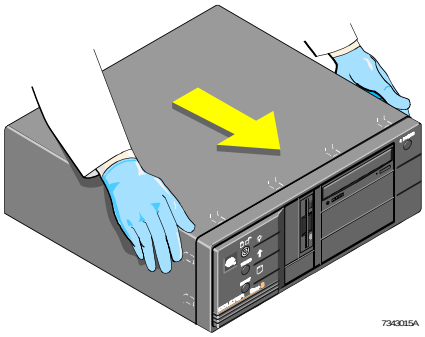


Figure 27-3: AMI Atlas Computer Base Cover -- Step 3



27.1.3. Removal of Front Cover

Required Resources:

- N/A

1. Pull front cover forward. Do not use tools to pry as the paint may be damaged.

27.1.4. Installation of Front Cover

Required Resources:

- N/A

1. Align four holding springs and snap cover in.

27.1.5. Removal of Circuit Cards

Required Resources:

- Tamperproof screwdriver
- Philips head screwdriver

1. Shutdown the GEN•S Workstation.
2. Turn power off to all peripheral devices then power off and unplug computer base.
3. Follow standard anti-static precautions to avoid damaging card.
4. Remove cover of computer base.
5. Remove screw holding the rear retaining cover of the card to be replaced then pull the card straight up until card is free from connector.

27.1.6. Installation of Circuit Cards

Required Resources:

- Tamperproof screwdriver
- Philips head screwdriver

1. Verify the configuration of the new circuit card and modify if needed to match the settings given in this manual.
2. Hold the board at each top corner above the slot to be inserted into and push down. The board should slide easily most of the way. When you feel resistance check the board's alignment. Then push firmly to seat the board in the slot.
3. Fasten the board's metal retaining bracket screw to the computers rear panel.
4. Replace top cover of computer base and plug in computer base.
5. Connect all cables and power up computer base.
6. Power up peripherals.

7. Complete GEN•S Workstation verifications.

27.1.7. Removal of CD-ROM Drive

Required Resources:

- Tamperproof screwdriver
- Philips head screwdriver

1. Shutdown the GEN•S Workstation.
2. Turn power off to all peripheral devices then power off and unplug computer base.
3. Remove the computer base top cover and front cover.
4. Push holding springs towards CD-ROM and pull forward slightly until cables can easily be removed.
5. Remove cables and pull CD-ROM out front of computer base.
6. Remove rails from drive.

27.1.8. Installation of CD-ROM Drive

1. Reverse procedure.

27.1.9. Removal of Hard Drive

Required Resources:

- Tamperproof screwdriver
- Philips head screwdriver

1. Shutdown the GEN•S Workstation.
2. Turn power off to all peripheral devices then power off and unplug computer base.
3. Remove the computer base top cover and front cover.
4. Push holding spring towards Hard Drive and pull up slightly until cables can easily be removed.
5. Remove cables and pull Hard Drive out top of computer base.
6. Remove rails from drive.

27.1.10. Installation of Hard Drive

1. Reverse procedure.

27.1.11. Removal of Floppy Drive

Required Resources:

- Tamperproof screwdriver
- Philips head screwdriver

1. Shutdown the GEN•S Workstation.
2. Turn power off to all peripheral devices then power off and unplug computer base.
3. Remove the computer base top cover and front cover.
4. Push holding spring towards Floppy Drive and pull forward including quick removal case slightly until cables can easily be removed.
5. Remove cables and pull Floppy Drive and quick removal case out front of computer base.
6. Remove Floppy Drive holding screws then remove Floppy Drive from quick removal case.

27.1.12. Installation of Floppy Drive

1. Reverse procedure.

28. MAINTENANCE

28.1. Maintenance

28.1.1. Barcode Scanner

The following information is reprinted from the PSC QUICKSCAN SCANTEAM® 3400 Series Decoded Output Operating Guide and Programming Menu manual by permission of PSC QUICKSCAN, Inc.

Scanning performance can degrade if the scan window is not clean. If the scan window is visibly dirty, or if the scanner is not scanning well, clean the scan window with a soft cloth or tissue dampened with water (or a mild detergent-water solution). If a detergent solution is used, rinse with a clean tissue dampened with water only. The scanner housing can also be cleaned the same way.

CAUTION: Risk of damage to the barcode scanner. Do not submerge the scanner in water. The scanner's housing is not water tight. Do not use abrasive wipers or tissues on the scan window: abrasive wipers may scratch the window. Never use solvents (alcohol or acetone) on the housing or window: solvents can damage the finish or the window.

28.1.2. Computer Base

Glass cleaner applied to a cloth can be used to clean the computer base. Never apply the glass cleaner directly to the computer system, instead spray cleaner on a cloth.

28.1.3. Monitor (Standard and Touchscreen)

Glass cleaner applied to a cloth can be used to clean the monitor. Never apply the glass cleaner directly to the monitor, instead spray cleaner on a cloth.

Caution: Risk of damage to the monitor. Vinegar and some chemicals will cause damage to the touchscreen. Only use household glass cleaners.

28.1.4. Keyboard

Glass cleaner applied to a cloth can be used to clean the keyboard. Never apply the glass cleaner directly to the keyboard, instead spray cleaner on a cloth.

If liquid is spilled into the keyboard, immediately unplug it. Allow the fluid to drain out by tipping the keyboard upside down, and allow several hours to dry before using.

28.1.5. Mouse

28.1.5.1. Mouse Cleaning

1. Turn the computer off.
2. Turn the mouse upside down and remove the mouse ball cover.
3. Turn the mouse right side up. The ball should drop into you hand. If it doesn't gently shake the mouse until the ball drops out of its socket.
4. Use isopropyl alcohol and a cloth to clean the ball.

5. Use isopropyl alcohol and cotton swaps to clean the ball socket and rollers.

6. Allow all surfaces to dry then return the ball to its socket and replace the mouse ball cover.

29. TROUBLESHOOTING

29.1. Troubleshooting Problems During Power on Self Test (POST)

When the computer is powered up a self-test is automatically completed. This Power on Self Test (POST) checks the microprocessor , the display, the memory and most of the peripheral devices. If the POST completes without detecting any configuration errors the system continues loading the operating system. The errors that may occur during POST either sound a beep code or display an error message. See Table 29.1-1 for POST beep code and Table 29.1-2 for POST error Messages.

29.1.1. Troubleshooting- POST Beep Codes

Table 29.1-1: AMI BIOS Beep Codes

Beep Code	Error Message	Recommended Action
1 beep	Refresh Failure	Power off for 1 minute and retry boot
2 beeps	Parity Error	Power off for 1 minute and retry boot
3 beeps	Base 64 KB Memory Failure	Power off for 1 minute and retry boot
4 beeps	Timer Not Operational	Power off for 1 minute and retry boot
5 beeps	Processor Error	Power off for 1 minute and retry boot
6 beeps	8042 - Gate A20 Failure	Power off for 1 minute and retry boot
7 beeps	Processor Exception Interrupt Error	Power off for 1 minute and retry boot
8 beeps	Display Memory Read/Write Error	Power off for 1 minute and retry boot
9 beeps	ROM Checksum Error	Power off for 1 minute and retry boot
10 beeps	CMOS Shutdown Register Read/Write Error	Power off for 1 minute and retry boot
11 beeps	Cache Memory Bad - Do Not Enable Cache	Power off for 1 minute and retry boot

Table 29.1-2: POST Error Messages

Error Message	Explanation and Recommended Action
C: Driver Error	The BIOS is not receiving a response from hard disk drive C: Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. If the same error occurs verify connections and, system card and drive jumpers.
C: Drive Failure	The BIOS is not receiving a response from hard disk drive C: Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. If the same error occurs verify connections and, system card and drive jumpers.
CMOS Battery State Low	The battery that powers the CMOS RAM is low. The battery is integrated in the system card and cannot be changed.
CMOS Checksum Failure	After CMOS RAM values are saved a checksum value is generated for error checking. This message appears if the saved value is different from the value generated during boot. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot.
CMOS System Options Not Set	The values stored in CMOS RAM are either corrupt or nonexistent. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot.
CMOS Display Type Mismatch	The video type in CMOS RAM does not match the type detected. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot.
CMOS Memory Size Mismatch	The amount of memory on the system card is different than the amount configured in CMOS RAM. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. After boot verify the system has the correct RAM size.
CMOS Time and Date not Set	The time and date are not set in the BIOS. Set the time and date in the BIOS then use SAVE CHANGED AND EXIT to start boot.
Diskette Boot Failure	The boot diskette in floppy drive A: is corrupt. It cannot be used to boot the system. Use another boot diskette.

Error Message	Explanation and Recommended Action
FDD Controller Failure	The BIOS is not able to communicate with the floppy disk drive controller. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. If the same error occurs verify the drive jumpers and connections.
HDD Controller Failure	The BIOS is not able to communicate with the hard disk drive controller. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. If the same error occurs verify the drive jumpers and connections.
Invalid Boot Diskette	The BIOS can read the diskette in floppy drive A:, but it cannot boot the system with it. Use another boot diskette.
Keyboard is Locked…Unlock it	The keyboard on the system is engaged. The system must be unlocked to continue the boot process.
Keyboard Error	The BIOS has encountered a timing problem with the keyboard. Verify the keyboard connection by connecting the keyboard directly to the computer base. If the error occurs again configure the BIOS then use SAVE CHANGED AND EXIT to start boot.
KB/Interface Error	The BIOS has found an error with the keyboard connector. Verify the keyboard connection by connecting the keyboard directly to the computer base. Configure the BIOS then use SAVE CHANGED AND EXIT to start boot. If the same error occurs verify connections and system card jumpers.
No ROM BASIC	Cannot find a bootable section on either drive A: or C:. Use another boot diskette.

29.1.2. GEN•S Workstation Does Not Boot and No Errors are Displayed

When the power switch is turned on, the system does not power up (i.e., the exhaust fan is not on, the hard drive does not spin, etc.)

Table 29.1-3: System Does Not Boot and Fan is Off

Possible Causes	Recommended Action
No power at ac outlet	• Verify ac with another appliance such as a light or try a known working outlet
The power cable is unplugged or defective	• Disconnect and reconnect power cable connections • Try another power cord
Voltage switch is improperly set	• With system powered off toggle switch then set at correct setting
Bad power supply in computer base	• Replace computer base

When the power switch is turned on the system has power (i.e., the exhaust fan starts, the hard drive begins to spin, etc.)but the boot sequence does not start.

Table 29.1-4: System Does Not Boot and Fan is ON

Possible Causes	Recommended Action
The monitor may not be on or the video may not be connected	• Turn monitor off and on and verify monitor is powering on • Disconnect and reconnect video cable connections
A card may not be seated correctly on the system card	• Power off system, remove all cards one at and reseat into system card then power back up.
A connector may not be seated correctly on the system card	• Check all system board connections
A card may be defective on the system card	• Remove all cards except the video card. If the

Possible Causes	Recommended Action
	system then works then power off and replace one card at a time to isolate defective card

29.2. Troubleshooting RCS

29.2.1. Dial Tone is Not Audible

While calling a Workstation the connection is not completed. Dial Tone is not Audible

Table 29.1-5: RCS Connection Failure -- No Dial Tone

Possible Causes	Recommended Action
The telephone line to the modem is not connected or connected to the wrong port on the modem	• Verify connection at modem and telephone jack
The telephone line is not working	• Verify telephone jack output using an analog phone. • Try an alternate telephone cord to modem
The modem cannot be initialized	• Close RCS application(s) then use Terminal program to test modem 1. Close all RCS applications if any are open. 2. Choose TERMINAL from the accessories menu 3. From the SETTINGS menu select COMMUNICATIONS 4. Select COM3 for CONNECTOR 5. Enter “AT” then press <ENTER>. After ENTER is pressed the screen should display OK below AT. This confirms communication with the modem. 6. If step 6 does not work verify the hardware configuration of the modem after shutting down the GEN•S Workstation then repeat this procedure. 7. Enter “ATDT” then press <ENTER>. After ENTER is pressed a dial tone should be audible. This confirms the telephone line is connected correctly 8. Enter “A”. The A will not appear on the screen but immediately below ATDT, NO CARRIER will appear and the dial tone will turn off. 9. Close Terminal

29.2.2. Dial Tone is Audible

While calling a Workstation the connection is not completed. Dial Tone is Audible

Table 29.1-6: RCS Connection Failure with Dial Tone

Possible Causes	Recommended Action
The connection was too noisy through telephone company connection.	• Retry at least two times to connect
The telephone number is not correct	• Verify phone number programmed in RCS
RCS is not enabled on the Workstation	• Dial number from a telephone and listen for the computer to answer with a high pitched tone. • Verify that RCS is enabled
The date is incorrect on either the remote computer or the Workstation	• Verify the date, time and time zone settings on both computers
The computer name is incorrect	• Verify the computer name

29.3. Troubleshooting Errors While Operating the GEN•S Workstation Installation

The complete error listing for the GEN•S is contained in the GEN•S service Manual Part number 4237253A. Errors that are generated by Windows NT are listed in Windows NT documentation. For any errors about specific software or hardware components check the Event Log for additional information then verify the software and hardware configuration.

QUICK REFERENCE

30. QUICK REFERENCE

30.1. IRQ, I/O Port and DMA Configuration

Table 30.1-1: IRQ, I/O Port and DMA Configuration

IRQ	Device	I/O Port	DMA	Mem. Address
0	Reserved, interval timer			
1	Reserved, keyboard buffer full	60		
2	Modem Card, (shown as IRQ 9 in Windows NT)	3E8		
3	COM2, Touchscreen	2F8		
4	COM1, UPS	3F8		
5	Sound Card	220,224	5	
6	Floppy Drive	3F0,3F7		
7	Parallel Port LPT 1	378		
8	Real Time Clock			
9	Modem Card (configured to IRQ 2 but defaults to IRQ 9 in Windows NT)	3E8		
10	Light Pen	210		
11	Network Card	FCE0		
12	Keyboard Port	64		
13	Reserved, Math coprocessor			
14	EIDE Controller 1			
15	EIDE Controller 2	170		
N/A	Multi-port Serial Card			D000
	Atdisk	1F0,3F6		

30.2. COM Port Configuration

Table 30.1-2: COM Port Assignment

COM Port	Device
COM1	UPS
COM2	Touchscreen
COM3	Modem
COM4	Multi-port Serial Card, GEN•S Analytical Station 1 AMC
COM5	Multi-port Serial Card, GEN•S SM 1
COM6	Multi-port Serial Card, Host Computer 1
COM7	Multi-port Serial Card, GEN•S Analytical Station 1 DIFF
COM8	Multi-port Serial Card, GEN•S Analytical Station 2 AMC
COM9	Multi-port Serial Card, GEN•S SM 2
COM10	Multi-port Serial Card, Host Computer 2
COM11	Multi-port Serial Card, GEN•S Analytical Station 2 DIFF

30.3. Part Numbers

30.3.1. GEN•S Workstation Components

This part listing below contains the components in a GEN•S Workstation. Replacement or repair of the internal parts of the computer base is not part of routine service on the GEN•S Workstation and should only be completed by experienced computer repair technicians.

Caution: Read section 1 of this document before replacing any components in the GEN•S Workstation.

Table 30.1-3: Part Numbers

P/N	Vendor P/N	Common Name
6027225	N/A	Cable, power, computer, 110 V ac with US style male plug
6028718	N/A	Cable, power, monitor to computer base
6028792	N/A	Cable, UPS, Back Ups 450
6028871	N/A	Cable, mouse extension
6028872	N/A	Cable, ac extension
6028873	N/A	Cable, keyboard extension
6028874	N/A	Cable, video extension
6028875	N/A	Cable, audio extension
6028373	N/A	Cable, touchscreen
2016744	N/A	Computer base, Pentium 133, 64 MB RAM, 3 GB HD,
2016394	N/A	Consumable, floppy, 3 1/2 1.44 MB, 1 disk
2016747	N/A	Data entry, bar code, used W/ computer
2016592	N/A	Data entry, keyboard, computer
2016622	N/A	Data entry, light pen pointing device, FTG PXL395
2016665	N/A	Data entry, mouse, black, PS/2
2016817	N/A	Display, monitor, 17 inch, color with touchscreen, Nokia-447L
2016816	N/A	Display, monitor, 17 inch, color, Nokia-447L
6915110	N/A	GEN•S Workstation imaging kit (latest version of image software, case)
6915106	N/A	Monitor arm, black with extension cables
6417471	N/A	Software, CD-ROM, Coulter Corporation Service Resource Kit
6417714	N/A	Software, CD-ROM, GEN•S Workstation Assistants and Tutorials CD version 1B
6417996	N/A	Software, CD-ROM, GEN•S Workstation Assistants and Tutorials CD version 2
6417639	N/A	Software, CD-ROM GEN•S Workstation and System Help version 1B
6417782	N/A	Software, CD-ROM GEN•S Workstation and System Help version 1C
6417819	N/A	Software, CD-ROM GEN•S Workstation and System Help version 1D
6417952	N/A	Software, CD-ROM GEN•S Workstation and System Help version 2A
4007001	N/A	UPS, Back Ups 450, 110V ac

30.4. Summary Configuration Table

The following table describes the Computer System Configurations for the listed part numbers. This table will be updated with future components, as they become available. Changes between revision are shown on the higher revision in bold text.

Table 30.1-4: Configuration Table for the GEN•S Workstation

COMPONENTS	C.C. PN 2016718	C.C. PN 2016744	C.C. PN 2016744
Operating System	Windows NT Workstation V3.51 with Service Pack 4.	Windows NT Workstation V3.51 with Service Pack 4. (NT V3.51 for GENS Applications version 1A, 1B, 1C and 1D) Windows NT Workstation V4.0 with Service Pack 3.	- Windows NT Workstation V3.51 with Service Pack 4. (NT V3.51 for GENS Applications version 1A, 1B, 1C and 1D) - Windows NT Workstation V4.0 with Service Pack 3.
OEM Configuration [Vendor Revision]	9001023	9001027 Version (-) [— , —]	9001027 Version (A) [A , A], [B , A], [C , B], { D , C], [X , X(A)]
GEN•S Application [Image P/N]	Beta B (1.962681) [N/A	1A (1.963412) [6417650] ,1B (1.970151) [6417662] ,1C [6417785],1D [6417825]	1A (1.963412) [6417651], 1B (1.970151) [6417661],1C [6417784], 1D [6417826]
Barcode Reader	N/A	PSC QUICKSCAN	PSC QUICKSCAN
BIOS	Version: 727091396 Coulter GEN•S	**- Release 727091396** **- Release 727032797** **- Release 727072997**	- Release 727091396 - Release 727032797 - Release 727072997
CPU Processor	Pentium 120 MHz	**Pentium 133 MHz**	Pentium 133 MHz
Cache	256K Pipeline Burst	256K Pipeline Burst	256K Pipeline Burst
RAM	32 MB Installed as 2 4x36 72 pin SIMMs	**64 MB Installed as 2 8x36 72 Pin SIMMs**	64 MB Installed as 2 8x36 72 Pin SIMMs
Hard Drive	Quantum 1.2 GB	**Quantum 3.2 GB**	Quantum 3.2 GB
CD-ROM Drive	Sony CSD-760E	**Sony CDU-311**	Sony CDU-311
Floppy Drive	TEAC FD-235HF	TEAC FD-235HF	TEAC FD-235HF
Sound Card	Creative Labs Sound Blaster 16PnP	Creative Labs Sound Blaster 16PnP	Creative Labs Sound Blaster 16PnP
System Card	ATLAS PCI-II Version 727.05	ATLAS PCI-II Version 727.05	ATLAS PCI-II Version 727.05
SCSI Card	Adaptec AHA-2920	Adaptec AHA-2920	Adaptec AHA-2920
Touchscreen	ELO Accutouch	ELO Accutouch	ELO Accutouch
Network Card	3 Com 3C590-Combo	3 Com 3C590-Combo	**3 Com 3C900-Combo**
Multi-port Serial Card	Equinox SS8-1	Equinox SS8-1	Equinox SS8-1
Modem Card	US Robotics VI Voice 33.6Kb	US Robotics VI Voice 33.6Kb	US Robotics VI Voice 33.6Kb
Video Card	STB Powergraph 64 PCI	**STB Powergraph 64 Video PCI**	STB Powergraph 64 Video PCI
Light Pen Card	FTG PXL395 Light Pen	FTG PXL395 Light Pen	FTG PXL395 Light Pen

COMPONENTS	C.C. PN 2016744	C.C. PN 2016744	C.C. PN 2016744	C.C. PN 2016744
Operating System	Windows NT Workstation V4.0 with Service Pack 3.	Windows NT Workstation V4.0 with Service Pack 3.	Windows NT Workstation V4.0 with Service Pack 3.	Windows NT Workstation V4.0 with Service Pack 3.
OEM Configuration [Vendor Revision]	[X , X (B)]	[X , X (C)]	[X , X (C.1)]	[X , X (C.2)]
GEN•S Application [Image P/N]	2A2 [6417943]	2A2 [6417943] 2B [6418079]	2A2 [6417943] 2B [6418079]	2A2 [6417943] 2B [6418079] 2B1 [6418114]
Barcode Reader	PSC QUICKSCAN	PSC QUICKSCAN	PSC QUICKSCAN	PSC QUICKSCAN
BIOS	Release S3030127A	Release S3030127A	Release S3030127A	Release S3030127A
CPU Processor	Pentium 133 MHz	Pentium 133 MHz	Pentium 133 MHz	**Pentium 233 MHz**
Cache	256K Pipeline Burst	256K Pipeline Burst	256K Pipeline Burst	256K Pipeline Burst
RAM	64 MB Installed as 2 4x36 72 pin SIMMs	**128 MB Installed as 4 8x36 72 Pin SIMMs**	128 MB Installed as 4 8x36 72 Pin SIMMs	128 MB Installed as 4 8x36 72 Pin SIMMs
Hard Drive	Quantum 3.2 GB	Quantum 3.2 GB	Quantum 3.2 GB	Quantum 3.2 GB
CD-ROM Drive	Sony CDU-711	Sony CDU-711	Sony CDU-711	Sony CDU-711
Floppy Drive	TEAC FD-235HF	TEAC FD-235HF	TEAC FD-235HF	TEAC FD-235HF
Sound Card	Creative Labs Sound Blaster 16PnP	Creative Labs Sound Blaster 16PnP	Creative Labs Sound Blaster 16PnP	Creative Labs Sound Blaster 16PnP
System Card	**ATLAS PCI-III**	ATLAS PCI-III	ATLAS PCI-III	ATLAS PCI-III
SCSI Card	Adaptec AHA-2920	Adaptec AHA-2920	**Adaptec AHA-2920C**	Adaptec AHA-2920C
Touchscreen	ELO Accutouch	ELO Accutouch	ELO Accutouch	ELO Accutouch
Network Card	3 Com 3C900-Combo	3 Com 3C900-Combo	3 Com 3C900-Combo	3 Com 3C900-Combo
Multi-port Serial Card	Equinox SS8-1	Equinox SS8-1	Equinox SS8-1	Equinox SS8-1
Modem Card	US Robotics VI Voice 33.6Kb	US Robotics VI Voice 33.6Kb	US Robotics VI Voice 33.6Kb	US Robotics VI Voice 33.6Kb
Video Card	STB Powergraph 64 Video PCI	STB Powergraph 64 Video PCI	STB Powergraph 64 Video PCI	STB Powergraph 64 Video PCI
Light Pen Card	FTG PXL395 Light Pen	FTG PXL395 Light Pen	FTG PXL395 Light Pen	FTG PXL395 Light Pen